112 FERC ¶ 61,013
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Pat Wood, III, Chairman;
Nora Mead Brownell and Joseph T. Kelliher.

California Independent System Operator Corporation — Docket No. ER02-1656-026

ORDER ON FURTHER AMENDMENTS TO THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR'S COMPREHENSIVE MARKET REDESIGN PROPOSAL

(Issued July 1, 2005)

1. In this order, the Commission addresses the California Independent System Operator Corporation's (CAISO's) revised conceptual proposal that sets forth proposed market design elements for inclusion in its Market Redesign and Technology Upgrade (MRTU) Proposal. Specifically, the CAISO's proposal seeks approval of three conceptual amendments to its prior MRTU Proposal: (1) the clearing of demand bids at the load aggregation point or LAP level; (2) a revised simplified hour-ahead market, renamed the hour-ahead scheduling process (HASP); and (3) market power mitigation measures. The purpose of the CAISO's conceptual filing is to solicit the Commission's guidance so that the CAISO can either proceed as planned or modify its proposal as necessary. In this order, we approve in principle the majority of the proposed market design elements, provide guidance and seek additional information and explanation of certain other aspects of the proposal, as discussed below.

2. Consistent with the nature of the CAISO's filing, the Commission's approval of the instant proposal is in principle only. Our objective is to provide guidance only, as requested by the CAISO, on whether the proposed market design elements are acceptable, so that the CAISO can proceed with development of software and systems, and the preparation of detailed tariff sheet amendments. We note that final Commission approval of the concepts discussed in this order will occur after the Commission accepts these detailed tariff sheet amendments. Accordingly, we will address specific issues that protestors raise at that time.

3. This order benefits customers by further delineating the conceptual framework for MRTU, which in turn will facilitate the ongoing development of an efficient, well-functioning wholesale market for customers. In addition, we are issuing this order before the CAISO's requested action date (July 31, 2005), which the CAISO states will allow it to meet its scheduled February 2007 MRTU implementation date.

I. Background

4. In January 2000, the Commission found the CAISO's congestion management scheme to be fundamentally flawed and directed the CAISO to design a comprehensive replacement congestion management approach.[1] The CAISO's progress on this project was hindered by the subsequent California energy crisis of 2000 and 2001. In an order issued December 19, 2001, the Commission further directed the CAISO to propose a plan by May 1, 2002, to implement a day-ahead market, which would be integrated later with the CAISO's future revised congestion management plan.[2] The CAISO responded by filing its three-phase Market Design 2002 (MD02) Proposal.[3] On July 17, 2002, the Commission issued an order accepting in part, rejecting in part and directing modifications of the CAISO's MD02 Proposal.[4]

5. On July 22, 2003, the CAISO filed a revised conceptual proposal to further develop features of its May 1, 2002 proposal. The Commission issued a guidance order on October 28, 2003, approving in theory many of these conceptual design elements, and seeking further information and explanation on certain other aspects of the proposal.[5] Commission staff held technical conferences in January and March 2004 to address a number of issues. On May 11, 2004, the CAISO filed a revised proposal on elements discussed at the January and March technical conferences. On June 17, 2004, the Commission issued an order providing guidance on these proposed elements.[6] Among

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[1] *California Independent System Operator Corp.*, 90 FERC ¶ 61,006, *reh'g denied*, 91 FERC ¶ 61,026 (2000) (January 2000 Order).

[2] *San Diego Gas & Electric v. Sellers of Energy and Ancillary Services*, 97 FERC ¶ 61,275 at 62,245 (2001).

[3] Phase 1: market power mitigation measures, real-time economic dispatch and the use of a single energy bid curve; Phase 2: an integrated forward market, including an energy market and procedures for procurement of ancillary services; and Phase 3: implementation of the full network model, redesigned firm transmission rights (Congestion Revenue Rights or CRRs), and the integration of congestion management with energy and ancillary services markets.

[4] *California Independent System Operator Corp.*, 100 FERC ¶ 61,060 (2002) (July 2002 Order). The July 2002 Order also imposed a west-wide market power mitigation program.

[5] *California Independent System Operator Corp.*, 105 FERC ¶ 61,140 (2003) (October 2003 Order).

[6] *California Independent System Operator Corp.*, 107 FERC ¶ 61,274 (2004) (June 2004 Order).

other items, the June 2004 Order approved the simplified hour-ahead market.[7] The Commission directed the CAISO to file within 180 days tariff language on the seven design elements addressed in the order, including tariff sheets to implement convergence bidding simultaneously with the start of the day-ahead market, or else a full explanation of why this should not be done, and the date when convergence bidding would be implemented.[8]

6. On rehearing of the June 2004 Order, the Commission upheld its decisions on several of these elements, but modified or clarified its guidance on: the application of the flexible offer obligation to extra-long start-up time units; Start Up/Minimum Load payments; self-provision of RUC; marginal losses details; alternative proposals for intermittent resources; and convergence bidding.[9] The Commission reserved decision on three key issues: (1) market power mitigation measures; (2) ancillary services procurement; and (3) whether the hour-ahead market should be simplified or financially binding.[10] In particular, to assist its decision-making process, the Commission directed the CAISO to provide a comparison of the costs and benefits of a simplified versus a financially-binding hour-ahead market.[11]

7. On October 28, 2004, the California Public Utilities Commission (CPUC) issued an interim decision in its Resource Adequacy Proceeding.[12] The CPUC Resource Adequacy Decision clarified resource adequacy requirements by: (1) setting the initial resource adequacy requirements; (2) accelerating to June 2006 the implementation date for the 15-17 percent Planning Reserve Margin; (3) establishing elements necessary to define a tradable capacity product; and addressing the next procedural steps (Phase 2) required to ensure that a functioning program can be implemented in 2005. In response to this decision, on November 3, 2004, Commission staff convened a technical

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[7] *Id.* at P 93.

[8] *Id.* at Ordering Paragraph (A) and P 159. The June 2004 Order also instituted a section 206 proceeding concerning the compatibility of Sellers Choice contracts with a locational marginal pricing (LMP) regime. *Id.* at Ordering Paragraph (C).

[9] *California Independent System Operator Corp.*, 108 FERC ¶ 61,254 (2004) (September 2004 Order).

[10] *Id.* at P 34, 43 and 50.

[11] *Id.* at P 46.

[12] Public Utilities Commission of the State of California, Order Instituting Rulemaking To Promote Policy and Program Coordination and Integration in Electric Utility Resource Planning, Docket # R. 04-04-003, October 28, 2004 (Resource Adequacy Decision).

conference to explore the CAISO's market power mitigation proposals for MRTU in light of the CPUC's Resource Adequacy Decision. Among the main items discussed at this conference were the interrelationship between the capacity markets established through the Resource Adequacy Decision and the energy and ancillary services markets to be administered by the CAISO, as well as the responsibility for enforcement of resource adequacy to ensure reliable grid operation.

8. To further assist the CAISO in its development of market power mitigation measures, on January 18, 2005, the Director of the Office of Markets Tariffs and Rates, pursuant to 18 C.F.R. §388.104, submitted to the CAISO a guidance letter identifying the issues the CAISO should address in its future conceptual MRTU filing (January 18 Guidance Letter).[13] On January 24, 2005, the Commission issued an order denying all requests for rehearing of its September 20 Order.[14]

9. Since issuance of the June 2004 and September 2004 Orders, the CAISO has continued its stakeholder process with market participants. In addition, the CAISO retained the services of an outside consulting firm, LECG, Inc. (LECG) to review and evaluate not only the three conceptual features at issue in this order, but all aspects of the CAISO's proposed market design. The consultants compiled their analysis in a report entitled *Comments on the California ISO MRTU LMP Market Design* (the LECG Report), which the CAISO released to the public on February 23, 2005. On April 7, 2005, Commission Staff held a telephone conference with the CAISO and LECG to discuss aspects of the LECG Report.

Overview of MRTU Proposal

10. The CAISO's MRTU proposal is based on an Integrated Forward Market (IFM)[15] that will co-optimize energy, congestion management and ancillary services procurement using a security-constrained unit commitment process in the day-ahead time frame.[16] Using the full network model, the CAISO will adjust market participants' preferred schedules to mitigate congestion, ensure local reliability and produce feasible forward schedules and congestion costs based on the differences between marginal energy prices

[13] *California Independent System Operator Corp.*, Docket Nos. ER02-1656, *et al.* (January 18, 2005) (unpublished letter).

[14] *California Independent System Operator Corp.*, 110 FERC ¶ 61,041 (2005).

[15] The Integrated Forward Market will consist of a financially binding day-ahead market, a Residual Unit Commitment Process, and an Hour-Ahead Scheduling Process.

[16] Before the day-ahead IFM, the CAISO will run a pre-IFM process where the CAISO will conduct market power mitigation and determine RMR dispatch levels.

at each node on the grid. The CAISO will also allocate transmission and generation capacity among competing uses using LMP, [17] and will settle with supply resources based on the applicable nodal price as determined by the Security Constrained Unit Commitment algorithm and the local market power mitigation measures (further described below). In addition, load aggregation zones will be established for load scheduling, bidding and settlement purposes.[18]

11. In the day-ahead market, market participants will submit preferred schedules and bids for energy and ancillary services through a CAISO-certified Scheduling Coordinator. After all schedules and bids have been submitted to the day-ahead market,[19] the CAISO will economically optimize those bids in light of transmission constraints. In addition, the CAISO will procure 100 percent of the ancillary services forecasted in the day-ahead market. Once the schedules and bids have been cleared in the day-ahead market and the CAISO has established the final day-ahead schedules, the CAISO will compare the schedules to its projected load forecast. If the amount of energy included in the final day-ahead schedules is below the CAISO's load forecast, the CAISO will secure additional resources under the Residual Unit Commitment (RUC)[20] process to meet its load forecast.

12. Subsequent to the day-ahead IFM, the CAISO proposes to run an hour-ahead scheduling process (described below) which will allow adjustments to the day-ahead schedules as real-time delivery approaches, but will not create a separate financial

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[17] The nodal pricing produced by the Integrated Forward Market will consist of three components: energy, congestion and transmission losses.

[18] Exemptions to the load aggregation will be loads served under non-converted existing transmission contracts (ETCs) that will schedule and settle according to their specific ETC rights; demand reduction by participating loads that will settle at the locational price; and entities that can operate as either loads or generators.

[19] The day-ahead IFM consists of schedules submitted to the CAISO before the beginning of a trading day indicating the levels of generation and demand scheduled for that trading period.

[20] The RUC process provides a reliability backstop that enables the CAISO to procure additional resources to meet load forecast and reserve requirements. Under the RUC process, the CAISO provides resources with a capacity payment for each MWh of RUC capacity that is not awarded ancillary service or dispatched for energy in the hour-ahead or real-time markets, unless the resource engages in uninstructed deviation or does not respond to the CAISO's dispatch instruction.

settlement, except for exports and imports. In essence, the settlements for the hour-ahead and real-time markets will be combined.[21]

Summary of the Filing

13. The CAISO's May 13, 2005 MRTU Conceptual Filing seeks approval of three conceptual amendments to its prior MRTU Proposal: (1) the clearing of demand bids at the LAP level; (2) a revised simplified hour-ahead market, renamed the hour-ahead scheduling process (HASP); and (3) market power mitigation measures that will be in place upon implementation of MRTU. In addition, the CAISO also describes the process for handling other policy issues and the MRTU tariff. Specifically, the CAISO states that due to the complexity of the task and tight implementation schedule, it is required to distinguish between the design features and elements that by necessity will be included in the MRTU implementation in February 2007 (Release 1) and those that will be implemented sometime after February 2007 (generically referred to as Release 2). According to the CAISO, Release 1 includes: (1) the market design concepts the Commission approved in its prior orders; (2) the design elements proposed in the instant filing (Category A design elements); and (3) certain other design elements and design details that will be addressed in the MRTU tariff filing (Category B design elements).[22] The CAISO further states that it plans to hold regular meetings with its stakeholders to resolve outstanding issues and to develop the MRTU tariff language, which the CAISO intends to file with the Commission by November 30, 2005.

14. The filing also includes several attachments: (A) a White Paper entitled *Comprehensive Market Redesign Update* (Market Design White Paper); (B) a White Paper entitled *Proposed MRTU Market Power Mitigation Measures* (Mitigation White Paper); (C) the LECG Report; (D) *Comments of Scott M. Harvey and William W. Hogan*

[21] The proposed timeline for the CAISO's markets is as follows. The CAISO will close the day-ahead market for Scheduling Coordinator submissions at 10:00 am. The CAISO will then produce a final day-ahead schedule before performing the day-ahead RUC procedure. At 1:00 pm, the CAISO will publish the final schedules resulting from the day-ahead IFM including any additional unit commitment or capacity reservations secured under the RUC procedure. Under the simplified hour-ahead scheduling process, the deadline for Scheduling Coordinator submissions will be 75 minutes prior to the beginning of the operating hour (referred to as T-75 minutes), and at 45 minutes prior to the beginning of the operating hour the CAISO will publish pre-dispatch notices to those units that are not intra-hour dispatchable.

[22] The Category B design elements are listed on pages 58-59 of the MRTU Conceptual Filing.

on the CAISO's Proposed Hour-Ahead Scheduling Process (Hogan & Harvey HASP Comments); (E) a Memorandum Re: Approval of MRTU Conceptual Design Proposals, which includes a summary of stakeholders' comments and the CAISO's response to them; and (F) the *Opinion of the California ISO's Market Redesign and Technology Upgrade Conceptual Filing* submitted by the CAISO's Market Surveillance Committee (Market Surveillance Committee Opinion). In its transmittal letter, the CAISO states that Commission approval by July 31, 2005 is necessary to ensure that the CAISO will meet its February 2007 deadline to implement MRTU.

15. Specifically, Attachment A, the Market Design White Paper, contains a description of the HASP and the day-ahead market clearing of demand bids at the LAP level; a summary of the outstanding MRTU design and policy issues the CAISO intends to resolve through a stakeholder process prior to filing the MRTU Tariff at the end of November, 2005; a brief description of several additional MRTU modifications and enhancements that the CAISO will not implement when the MRTU markets begin operating, but which the CAISO believes are strong candidates for implementation soon thereafter (generically referred to as Release 2); a brief summary of the stakeholder process, stakeholder comments on the LAP and HASP and the CAISO's response to those comments and; a summary of the CAISO's response to the main concerns raised by William Hogan, Scott Harvey and Susan Pope of LECG in the LECG Report. Attachment B, the Mitigation White Paper, describes the CAISO's proposed market power mitigation provisions under MRTU, which include a number of modifications to the CAISO's prior market power mitigation proposal.

16. The LECG Report, at Attachment C, provides a review of the details of the "still-evolving" MRTU design, compares them against related features of other markets, identifies potential problems or internal inconsistencies, and suggests direction for future modifications. In Attachment D, the Hogan & Harvey HASP Comments discuss the relative merits and disadvantages of the HASP as compared and contrasted with a financially binding hour-ahead market, and ultimately support the HASP. Attachment E contains a memorandum from CAISO management to the CAISO governing board recommending approval of the clearing of demand bids at the LAP level and the proposed market power mitigation provisions.

17. The Market Surveillance Committee[23] Opinion, at Attachment F, comments on the CAISO's MRTU Conceptual Filing. The Market Surveillance Committee Opinion states,

[23] The Market Surveillance Committee is an independent advisory group with authority to suggest changes in CAISO rules and protocols, or recommend sanctions or penalties directly to the CAISO governing board. *See* http://www.caiso.com/surveillance/overview/Committee.html.

among other things, that modifying the mechanism for clearing LAP-level demand bids in the integrated forward market is necessary to ensure the accuracy of nodal day-ahead energy schedules. The Market Surveillance Committee states that, while clearing all loads at LAP-level prices eliminates the risk of high relative prices for certain load-serving entities (LSEs), this scheme implies that loads in high-cost areas will receive a cross-subsidy from loads in low-cost areas. The Market Surveillance Committee reasons that these subsidies may be appropriate for existing consumers because California's current transmission network was not built to serve a wholesale market with LMP pricing. The Market Surveillance Committee opines that a superior long-term solution would be to allocate CRRS to loads to limit average price differences across locations within each LAP at current consumption levels. In addition, the Market Surveillance Committee states that it may be more cost-effective to formulate a long-term solution to the predispatch of intertie bids before committing to a design for the HASP. Further, the Market Surveillance Committee opines that the CAISO's proposed mitigation package reflects the Market Surveillance Committee's philosophy that the best approach to managing market power in energy markets is to focus strong mitigation on the aspects of the energy and ancillary services procurement process that are unlikely to produce competitive outcomes, while minimizing interference elsewhere. Finally, the Market Surveillance Committee notes that a major shortcoming of the current MRTU design is lack of a comprehensive framework for managing local market power.

II. Notices, Interventions and Comments

18. Notice seeking comments in relation to the CAISO's filing was published in the *Federal Register*, 70 Fed. Reg. 30,102 (2005), with motions to intervene, comments and protests due on or before June 3, 2005. The Independent Energy Producers Association and the Western Power Trading Forum (IEP/WPTF) filed a "Joint Motion for Extension of Time" on May 27, 2005, and the Commission extended the time for filing answers to June 8, 2005. In response to the Notices, the following entities filed timely interventions, protests or comments: Southern California Edison Company (SoCal Edison); the Cities of Anaheim, Azusa, Banning, Colton and Riverside, California (Southern Cities); IEP/WPTF; Dynegy Power Marketing Inc., El Segundo Power LLC, Long Beach Generation LLC, Cabrillo Power I LLC and Cabrillo Power II LLC (collectively, Dynegy) and Williams Power Company, Inc. (Williams) (together, Dynegy/Williams);[24] City of Santa Clara, California, Silicon Valley Power (SVP); California Department of Water Resources State Water Project (State Water Project)); The Metropolitan Water District of Southern California (Metropolitan); California Electricity Oversight Board (CEOB); Duke Energy North America LLC, Duke Energy Trading and Marketing L.L.C. and Duke Energy Marketing America, LLC (Duke); Southern Municipal Utility Water

[24] Dynegy/Williams support and join the Joint Protest filed by IEP/WPTF.

District (SMUD); The City and County of San Francisco (San Francisco); Calpine Corporation (Calpine); State of California Public Utility Commission (CPUC); Pacific Gas & Electric Company (PG&E); Powerex Corp. (Powerex); Sempra Energy (Sempra); Strategic Energy, L.L.C; and Coral Power Company (Coral). On June 23, 2005, the CAISO filed a motion for leave to file an answer, and an answer to comments, protests, motions to reject and request for evidentiary hearing. On June 29, 2005, SWP responded to the CAISO's answer with supplemental comments and a protest.

III. Discussion

A. Procedural Matters

19. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure (Rules), 18 C.F.R. § 385.214 (2004), the timely, unopposed motions to intervene of those entities that are not already parties to this proceeding serve to make them parties to this proceeding. Rule 213(a)(2) of the Commission's Rules, 18 C.F.R. § 213(a)(2) (2004), prohibits an answer to a protest and/or an answer unless otherwise ordered by the decisional authority. We are not persuaded to accept either the CAISO's or SWP's answer and will, therefore, reject them.

B. Proposal to Clear Demand Bids at the LAP Level

20. In the CAISO's July 22, 2003 filing,[25] the CAISO proposed to establish three mandatory default load aggregation pricing areas or LAPs for the purpose of load scheduling, bidding and settlement.[26] The CAISO indicated that the LSEs within these boundaries would be required to schedule loads at the LAP level, and the CAISO would settle loads based on aggregate prices that are the weighted averages of the nodal prices in the LAP. Because the Integrated Forward Market optimization requires load to be located at individual nodes, the CAISO proposed to distribute submitted load bids and self-schedules to individual nodes using Load Distribution Factors (LDFs) for the purpose of running the Integrated Forward Market. Once the Integrated Forward Market has determined the final schedule, the CAISO would re-aggregate nodal load schedules to the LAP level for the purpose of providing these schedules to the Scheduling Coordinators and for settlement. In the case of self-scheduled loads, the distribution

[25] *See* July 22, 2003 Filing in Docket No. ER02-1656-015 at 39.

[26] The CAISO defines the load aggregation points as the transmission service territories of SoCal Edison, PG&E and SDG&E. The aggregation scheme would apply to municipal and direct access loads, as well as loads of the three investor owned utility distribution companies. The CAISO also proposed that load would not be permitted to opt-out of the aggregation scheme.

procedure would simply allocate LDF-scaled quantities of self-scheduled load to each node within the LAP. In the case of load bids, however, the distribution procedure would place a demand curve at each node, having prices that were identical to the submitted LAP-level bid prices and quantities that were scaled by the LDFs. In the optimization, the determination of LMPs would result in the load bids clearing at different points on each nodal demand curve. The CAISO would then re-aggregate nodally-cleared loads to LAP-level day-ahead load schedules for each Scheduling Coordinator. While the CAISO proposed to settle loads on an aggregated basis, the CAISO proposed to publish the nodal prices.

21. In its October 2003 Order, the Commission found the CAISO's proposal to aggregate prices for load over each of the three existing investor owned utilities (IOUs) service territories to be a reasonable and simplified approach to introduce LMP pricing, while minimizing its impact on load.[27] The Commission further stated that the proposal was consistent with similar load aggregation methodologies approved.

The CAISO's Revised Proposal

22. In response to concerns raised in the LECG Report that the CAISO's proposed approach for distributing load bids (but not self-schedules) to individual nodes and re-aggregating the nodal loads to the LAP level was problematic and could have adverse consequences,[28] the CAISO proposes to modify its load aggregation methodology by clearing LAP-level load bids based on LAP prices.

23. The CAISO now proposes to: (1) use LDFs to distribute bid quantities to nodes; (2) clear the Integrated Forward Market based on these load quantities as if they were price takers, determine resulting LMPs and calculate LAP prices; (3) clear LAP-level

[27] October 2003 Order, 105 FERC ¶ 61,140 at P 65.

[28] For example, LECG noted that zonal bids that would clear based on the zonal price may not entirely clear in the day-ahead market if some nodal prices exceed the zonal average price. LECG argued that this would leave load serving entities exposed to real-time prices on the load that does not clear in the day-ahead market. Alternatively, LECG contends that if a load serving entity submits zonal bids reflecting the expected price level in the high priced portion of the zone, the bid may clear the day-ahead market at a zonal price that exceeds the expected real-time zonal price and, thus, the cost of meeting load would be too high. The LECG Report also concluded that the proposed re-aggregation of nodally cleared load bids into zonal schedules could produce revenue inadequacy in real-time settlements because day-ahead schedules would be infeasible. *See* LECG Report at 10–26 and Appendix I.

load bids based on LAP prices to determine LAP-level final day-ahead schedules; and (4) repeat steps (1)–(3) iteratively revising the price-taker load quantities at each node until these quantities and the resulting LMPs are consistent with the quantity of load that clears at the LAP level based on the LAP price.

24. The CAISO contends that the modification to the LAP proposal not only ensures that the nodal distribution of load in the final day-ahead schedule is consistent with the initial LDFs, but also provides an optimal commitment in the Integrated Forward Market to serve the actual distribution of load. The CAISO also contends that the revised approach is consistent with the New York Independent System Operator (NYISO) markets and responds to the concerns raised in the LECG Report. For these reasons, the CAISO requests that the Commission grant approval of its revised concepts concerning the clearing of demand bids.

Comments on Proposal for Clearing Demand Bids at LAP Level

25. The CPUC supports the CAISO's proposal for clearing demand bids at the LAP level because it reduces LSEs' exposure to spot market prices, avoids the creation of infeasible schedules that send inaccurate signals to the market, and reduces costs to end-users. In addition, the CPUC supports the proposal because it mirrors what is being successfully accomplished in the NYISO markets. Coral and the CEOB support or at least have no objections to the LAP proposal. SoCal Edison indicates that the LAP proposal appears to be reasonable, but cautions that sufficient market simulation should be conducted to uncover potential problems with the CAISO's proposal.

26. SVP, a municipal utility in a congested load pocket that is not directly connected to generation, supports the price aggregation because a pure nodal pricing system would subject it and many smaller California utilities to excessive congestion charges simply due to their location. It states that a pure nodal pricing system would penalize it for being located in the traditional service area of one of the IOUs that has historically used a least-cost planning approach, opting to invest in generation instead of upgrading the transmission system.

27. Many of the parties state that they are concerned that the relatively small number of large LAP areas may not be sufficient to create meaningful demand response, may not send appropriate price signals, and will reduce the number of CRRs available to participants, thereby reducing the ability of participants to hedge congestion costs.[29] The majority of the parties support disaggregating the LAP zones further, or at least preserving the design capability of the system so that the LAP zones may be

[29] *E.g.*, State Water Project at 21–22, Metropolitan at 3, Sempra at 8-9.

disaggregated further at a later date.[30] With respect to future LAP changes, Sempra argues that periodic changes to the number of LAP areas will most likely hamper forward contracting, and therefore it is imperative that the MRTU software, especially the settlement software, be designed to easily accommodate use of trading hubs and varying levels of LAP granularity so that the aggregation of load prices can respond to what might be changing policy preferences and technical requirements.

28. Metropolitan argues that, while the CAISO contends that the proposed aggregation is similar to that used in the NYISO, the NYISO has eleven zones or LAP areas while the CAISO has three. In addition, the NYISO zones (whose peak loads range from 2,065 MW to 11,315 MW) are generally much smaller than those proposed by the CAISO. While the CAISO's proposed LAP for San Diego Gas & Electric (with a peak load of 4,462 MW) falls within the NYISO range, the two remaining proposed LAPs are roughly twice the size of NYISO's largest zone (22,480 MW for PG&E and 23,305 MW for SoCal Edison). Metropolitan states that, because of the link between LAP area sizes and CRRs, the Commission should defer action on the LAP proposal until market participants have seen the latest CAISO CRR study.[31]

29. Southern Cities indicates that Anaheim, Colton, and Riverside have generation resources located in their own systems, and, therefore, do not use the CAISO grid to serve the load of the city in which generation is located. However, under the current proposal, those cities would pay an aggregated LAP price for energy used to serve their loads. Southern Cities argues that the Commission should condition the approval of the CAISO's proposal to clear demand at the LAP level on maintaining design capability to disaggregate the currently proposed LAP zones and/or allow netting of generation at the same location prior to settlement.

30. Southern Cities also argues that there is significant interplay between the LAP pricing proposal and implementation of CRRs. They argue that the LECG Report clearly indicates that expansive LAP areas will limit the amount of CRRs due to internal constraints within the area covered by LAP. Therefore, Southern Cities believes this new proposal will not solve problems associated with intra-zonal congestion. A second problem that arises from the use of aggregate load zones in the context of CRR allocation

[30] *E.g.*, Southern Cities at 3, Sempra at 9, State Water Project at 14.

[31] The CAISO is currently conducting CRR Study 2, which is designed to provide an initial estimate of the feasible sets of CRRs that eligible parties may receive through the allocation process, as well as an estimate of the financial impact of each party's allocated set of CRRs. The CAISO intends to release the results of CRR Study 2 by the end of July, 2005.

is that it leads to differences between the load zone price and the generator price for generation and load at the same location. According to Southern Cities, this artificial price difference will impede hedging by LSEs serving load with their own generation, lead to cost shifts among LSEs and exacerbate the under-allocation of CRRs arising from reliance on aggregate load zones for pricing.

31. State Water Project asserts that LAP, as proposed by CAISO, is contrary to the policy that market designs that base prices on the averaging or socialization of costs may distort consumption, production and investment decisions and ultimately lead to economically inefficient outcomes as expressed in Order No. 2000.[32] State Water Project argues that the current CAISO proposal would determine nodal signals for generation and load, but then require the CAISO to engage in multiple complicated steps to undo nodal signals to load. Essentially, because the costs within each zone are averaged, no locational price signals are sent within the zones. Also, State Water Project argues that LAP, as proposed, may have serious potential adverse consequences as outlined in the CAISO's transmittal letter.

32. CDWR contends that, if the CAISO is not required to implement full nodal pricing for loads, it should be required to implement pricing based upon sub-zones and voluntary nodal pricing for large loads, similar to what has been approved in the New England Independent System Operator (ISO-NE).[33] It argues that ISO-NE proposed to use nine pricing zones for a region less populous and expansive than California. Part of that proposal provided that nodal pricing would be made available to loads qualified to opt into such pricing. State Water Project recites[34] the following portion of the December 21 Order:

> An individual end-use metered customer should be at least 5 MW in size, connected to a single node, and be in compliance with certain technical and administrative criteria. The Pricing Study further recommends that all participants in SCNP (special case nodal pricing) be required to satisfy

[32] *Regional Transmission Organizations*, Order No. 2000, 65 *Fed. Reg.* 809 (January 6, 2000), FERC Stats. & Regs. ¶ 31,089 at 31,219 (1999), *order on reh'g*, Order No. 2000-A, 65 *Fed. Reg.* 12,088 (March 8, 2000), FERC Stats. & Regs. ¶ 31,092 (2000), *petitions for review dismissed, Public Utility District No. 1 of Snohomish County, Washington v. FERC*, 272 F.3d 607 (D.C. Cir. 2001).

[33] *Id.* at 14.

[34] *Id.* at 15-16.

> metering and telemetering requirements at their own expense and recommends that once in the program, customers not be allowed to switch back to zonal pricing for at least twelve months.[35]

33. State Water Project argues that the Commission found, in the December 21 Order, that granting customers an ability to self select nodal pricing as described in the special case nodal pricing program

> [r]epresents an acceptable alternative under the facts and circumstances at play in the New England wholesale markets. Among other things, SCNP will provide price signals at specific nodes and thus represent a significant improvement in relation to ISO-NE's existing zonal prices. SCNP nodal prices will also reflect the actual marginal bid cost of delivering energy to a specific node. In contrast to ISO-NE's current zonal pricing approach, SCNP will send more accurate and transparent price signals to SCNP participants, which in turn will encourage more price responsive demand among SCNP participants.[36]

State Water Project argues that it does not appear that the CAISO considered this program, as offered in ISO-NE, but believes it may be a reasonable proposal to include in the CAISO market.

Commission Determination

34. The Commission approves the CAISO's proposal to clear demand bids at the load aggregation point or LAP level. We agree that the new proposal avoids several important problems of the original proposal, including avoiding infeasible day-ahead schedules.

35. The Commission agrees with intervenors that the currently proposed LAP zones should be further disaggregated to provide more accurate price signals and assist participants in the hedging of congestion charges, and notes that the CAISO has suggested it will re-examine the appropriate number of zones following the release of CRR Study 2.[37] Zonal disaggregation is supported by the majority of the participants

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[35] *New England Power Pool*, 109 FERC ¶ 61,322 at P 10 (2004) (December 21 Order).

[36] December 21 Order at P 17.

[37] In its CRR Allocation Rules White Paper, issued June 14, 2005, the CAISO states that its CRR Study 2 "will offer quantitative estimates of the trade-offs between allocating CRRs sinking (and settling) at the three large LAPs versus CRRs sinking at more disaggregated zones." CAISO White Paper, CRR Allocation Rules, June 14, 2005,

(continued…)

filing comments on the LAP proposal, the CAISO's Market Surveillance Committee,[38] and the LECG Report.[39] In its report, for example, LECG states that the "averaging of prices across the LAP eliminates significant price differences at individual nodes. This is a fundamental problem that preserves one of the principle defects of the previous market design that the MRTU was intended to eliminate."[40] Moreover, a "zonal bidding system is less efficient than a fully nodal bidding system."[41] LECG also highlighted in its report that the use of highly aggregated zones is likely to undermine the ability of the CAISO to award CRRs that effectively hedge congestion costs and may lead to unintended cost shifts among transmission customers. The LECG Report states:

> The CAISO has recognized that when a simultaneous feasibility test is performed for CRRs defined to broadly aggregated load zones, the resulting set of feasible CRRs is likely to understate the actual ability of the existing transmission system to hedge congestion. This understatement would occur because transmission constraints within the aggregated load zone can result in differences in the proportion of load that can be met with imports across different areas within the aggregated load zone. In essence, when CRRs are defined to the LAP, the most limiting transmission constraint into any sub-region of the LAP limits the quantity of CRRs that can be awarded from a given source to the LAP.[42]

36. We encourage the CAISO to consider an eventual move to nodal demand pricing, but we will accept zonal demand pricing. There are many advantages to full nodal pricing. It sends more accurate price signals to load and, therefore, would encourage more demand response, which is an important element in mitigating market power and promoting an efficient market. However, we appreciate that some areas could experience higher prices under a nodal model, and we understand the CAISO's interest in softening the distributional impacts of LMP. Further, we note SVP's concern that LMP will create an economic hardship on entities located in load pockets. Therefore, we will accept zonal pricing for load, but direct the CAISO to increase the number of currently proposed zones.

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at http://www.caiso.com/docs/2005/06/14/2005061414291518999.pdf.

[38] Market Surveillance Committee Opinion at P 2.

[39] LECG Report at P 1-2.

[40] *Id*. at P 14.

[41] *Id*. at P 15.

[42] *Id*. at P 94.

37. As for the appropriate number of zones to disaggregate to, the Commission turns to the CAISO and market participants. While the parties have argued for further zonal disaggregating, no party has suggested the appropriate number of LAP zones. At a minimum, however, each wholesale customer should have the option of establishing, as a separate zone, the set of nodes where it receives energy. This option would allow each wholesale customer to protect itself from subsidizing the energy purchases of other wholesale customers. This option could also help address the concern raised by Southern Cities about the potential of paying a different price for energy than it receives for energy produced at the same location. Additionally, many parties have argued that the allocation of CRRs is directly linked to the size of the zones and it may be useful to have the results of the CRR 2 study prior to finalizing the location and size of specific zones. The Commission agrees and encourages the CAISO, in reviewing the results of its CRR 2 Study, to consider how the sizing of the zones may impede the ability of market participants to effectively hedge congestion costs due to the reduced availability of CRRs that result from larger zone definitions.

38. We agree with Sempra that MRTU software, especially settlement software, should be designed to easily accommodate use of trading hubs and varying levels of LAP granularity so that the aggregation of load prices can respond to potentially changing policy preferences and technical requirements. Moreover, no party opposes such software flexibility. We therefore direct the CAISO to ensure that the software for Release 1 of MRTU can easily accommodate the use of trading hubs and varying levels of LAP granularity.

39. State Water Project requests the Commission to direct the CAISO to implement voluntary nodal pricing for large loads, as it has approved for ISO-NE. Special Case Nodal Pricing (SCNP), as approved for ISO-NE, allows certain end-use customers to pay a nodal price.[43] With respect to implementing SCNP in California, we have no record on what effects adoption of SCNP would have in California. Since, as a general principle, we strongly encourage demand responsive measures, we direct staff to convene a technical conference to explore demand response options in California, including SCNP.

C. HASP Proposal

40. Following the Commission's September 2004 Order, the CAISO has further modified its simplified hour-ahead market. The CAISO proposes an hour-ahead scheduling process (HASP) in which there would be no hour-ahead settlement prices

[43] *See New England Power Pool and ISO New England, Inc.*, 109 FERC ¶ 61,322 (2004).

(except for imports and exports).[44] The purpose of the HASP is to provide an opportunity for the CAISO and Scheduling Coordinators to make adjustments in the day-ahead schedule to reflect changes in expected supply and load conditions. The mechanics of the process are such that hour-ahead and real-time bid submissions for energy would be combined into a single bidding and scheduling process. There would be no bids or self-schedule changes for load in the HASP. The CAISO will issue binding pre-dispatch instructions for self-schedules submitted under the HASP that it determines are feasible, as well as accepted energy bids from supply resources that must be pre-dispatched. Submitted energy supply bids and supply self-schedules would be cleared against the CAISO's hour-ahead forecast of imbalance energy requirements. Under the proposal, the pre-dispatch instructions will become the reference for establishing real-time deviations, so that differences between the pre-dispatch instructions and the final day-ahead market schedule will not be subject to real-time uninstructed deviation penalties.

41. This proposal reflects three revisions to the CAISO's prior simplified hour-ahead market proposal, including: (1) using hour-ahead prices for settlement of import and export schedules accepted in the HASP; (2) purchasing ancillary services from imports on a 60-minute basis in the pre-dispatch time frame; and (3) netting a Scheduling Coordinator's HASP-scheduled increase in its supply schedule against its real-time load deviation from its final day-ahead schedule for the purpose of assessing uplift charges due to HASP/real-time unit commitment by the CAISO. Under the proposal, the portion of the demand deviation that is matched with accepted hour-ahead supply is exempt from any hour-ahead and real-time unit commitment uplift charges, and is deemed non-participating in the CAISO energy market for credit purposes.

42. The CAISO explains that the first two modifications address concerns raised by the Commission in the September 2004 Order concerning the impact of HASP on imports and the third modification is in response to concerns raised by LSEs who may want to schedule their own resources or bilaterally procured supplies in the hour ahead time frame to serve their own load.

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[44] The CAISO proposed to apply these HASP prices for inter-tie schedules only in the event of hour-ahead congestion on the associated interties. However, in light of recent events with respect to the intertie predispatch under Phase 1B, the CAISO now believes that it may be preferable to settle intertie pre-dispatches based on hour-ahead prices in all instances, not just when there is hour-ahead congestion. The CAISO proposes to set this issue for resolution during the upcoming stakeholder process and to include a final resolution in the MRTU tariff to be filed on November 30, 2005. The pre-dispatched quantities for internal self-schedules cleared in the HASP are settled based on Real-Time LMPs.

Compliance with September 2004 Order

43. The CAISO states that its HASP Proposal is just and reasonable and complies with the Commission's directives in the September 2004 Order. The CAISO provides a comparison of the costs and benefits associated with a financially-binding hour-ahead market versus its proposed HASP. The CAISO offers that the proposed HASP:

- moves the deadline for submitting hour-ahead schedule changes closer to real-time (from T-120 to T-75).
- avoids some difficult market design issues and potential market distortions associated with the hour-ahead market, such as the potential export of capacity procured in the day-ahead RUC process.
- avoids the substantial administrative costs associated with the hour-ahead market.
- addresses virtually all concerns expressed by parties and by the Commission in its September 2004 Order.

44. The CAISO states that it does not believe there are significant benefits associated with implementing a financially binding hour-ahead market, relative to the simplified hour ahead process it proposes. Rather, the CAISO points out that using an hour-ahead market in which demand bids clear against supply bids would make it impossible for the CAISO to prevent capacity procured in the day-ahead RUC process from being scheduled to serve export demand without imposing a complicated and undesirable constraint on the clearing of the hour-ahead market. The CAISO asserts that this could leave it short of supply in real time.[45] In addition, the CAISO states that a financially-binding hour-ahead market adds between $150,000 and $300,000 to the current budget for system development and results in greater cost impacts on the overall project for testing of the settlement systems.

45. Additionally, the CAISO asserts that there are additional administrative costs associated with development of additional settlement data that are not incurred in connection with a HASP. Lastly, the CAISO asserts that it would not be able to meet the February 2007 MRTU implementation date if it were required to implement a financially-binding hour-ahead market in Release l of MRTU.[46]

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[45] The CAISO believes the proposed HASP design solves this problem by clearing against the CAISO load forecast, instead of against bid-in demand, so that export demand bids submitted to HASP will be cleared only after the HASP optimization assures that there are sufficient supply schedules and bids to meet real-time CAISO control area load and reserve requirements.

[46] According to the CAISO, these impacts result mainly from the delay in having all the components ready for the January 2006 system integration and testing, thereby

(continued…)

46. In addressing the cost of a possible "lost opportunity" of not implementing an hour-ahead market initially and then deciding to add it to the market design at a later date, the CAISO asserts that implementation of an hour-ahead market at some future date after the initial implementation of MRTU would not be prohibitively difficult or costly relative to the cost estimates above (that relate only to the settlements systems) because it would be facilitated by the flexibility being incorporated into the new settlements system. In contrast, the CAISO believes that implementation of an hour-ahead market at this time poses a greater challenge and expense because the CAISO proceeded, after the Commission's June 2004 Order approved a simplified hour-ahead market in concept, with development based on a simplified HASP design. The CAISO further states that if the Commission were to determine that an hour-ahead market is ultimately preferable to the HASP proposal, implementation would best be deferred for a subsequent MRTU release.

47. The CAISO believes that concerns regarding ancillary services can be addressed separately and should not hinder the Commission's approval of HASP. In particular, the CAISO asserts that adoption of HASP as a primary design element of MRTU rather than a full hour-ahead settlement market does not preclude the possibility of creating a multi-settlement ancillary services market in the future. The CAISO recognizes that there are outstanding ancillary services issues, specifically the pricing of ancillary services procured in HASP and in real time that must be addressed in the upcoming MRTU stakeholder process. At the same time, the CAISO asserts that attempting to incorporate an hour-ahead or real-time re-optimization of ancillary services into Release 1 would add unacceptable risk to the project schedule, and, therefore, in order to maintain the project schedule, the CAISO argues that modification should be postponed, if it is determined necessary, to Release 2.

48. Lastly, CAISO states that there is no basis to treat it differently than other independent system operators especially given that the CAISO has made modifications to its proposal to address the import-related concerns enunciated by the Commission in its September 2004 Order.

Comments on the HASP

49. The CEOB states that the HASP provides a good balance between the additional benefits of the functionality of a full hour-ahead market settlement without adding significant costs to market participants or delaying the February 2007 MRTU implementation target. The CEOB states that the Commission should approve the HASP concepts even though the specific details regarding the settlement of inter-tie bids are not

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deferring all subsequent project steps that must be done sequentially.

fully specified. SoCal Edison supports the CAISO's proposed HASP and states that the uncertain benefit of a full settlements hour-ahead market does not outweigh the high implementation costs. SoCal Edison further states that although final implementation details of the HASP have not been fully developed, they support the proposal so long as it allows for supply schedule adjustments before real time and allows Scheduling Coordinators to avoid exposure to penalties for deviations in the real-time market.

50. The CPUC supports the CAISO's proposal and urges the Commission to approve its key elements in a timely manner, given the timetable to implement the market redesign by early 2007 and the requirements of the CAISO to provide its software vendor with critical path software design decisions in order to preserve its implementation schedule and reduce complexity and operating costs. The CPUC recognizes that the adoption of hour-ahead prices for settlement of import and export schedules accepted in the HASP is related to issues the CAISO is facing in Amendment No. 66 (discussed below) and acknowledges that the HASP proposal may change as a result of the implementation of Amendment No. 66.[47] Consequently, the CPUC requests that the Commission grant approval of the HASP proposal, but allow the CAISO to provide any further changes in its MRTU tariff filing.

51. Although PG&E agrees with the CAISO that a full hour-ahead market is neither necessary to achieve the essential needs of market participants, nor sufficiently desirable to justify its cost relative to the benefits of the HASP, it asserts that payment of an hour-ahead market clearing price to imports and exports has not been shown to be workable. PG&E states that many details of the HASP, including how the CAISO intends to forecast real-time load to make intertie procurement decisions, are critical to determining whether it will operate in a just, reasonable, and cost-effective manner.

52. Metropolitan seeks additional information regarding how the CAISO will perform its hour-ahead IFM optimization without an hour-ahead load schedule from State Water Project's substantial pump loads. Metropolitan states that State Water Project loads cannot be forecasted by the CAISO in a manner similar to retail loads because these loads are driven by water delivery or environmental requirements and are usually independent of prevailing weather conditions. Although the CAISO has stated that it will continue its current practice of receiving hour-ahead load information from non-conforming loads (State Water Project's) to incorporate into its hour-ahead load forecast, Metropolitan asserts that in order to prevent inadvertent CAISO procurement of excess generation due to the inability of LSEs to submit revised load schedules in the HASP, it recommends that the CAISO further develop written procedures to enable large end-use or LSEs to provide updated load information to the CAISO.

[47] *See* Docket No. ER05-718.

53. SVP seeks additional detail from the CAISO on how it will integrate the Metered Sub-System (MSS) contracts with the HASP proposal and requests that the Commission reiterate that the purpose of the CAISO's MSS stakeholder process with respect to HASP is to develop mechanisms by which MSS agreements can be honored in conjunction with the HASP.

54. IEP/WPTF states that they are concerned that the software design and development plan may preclude the ability of the CAISO to address stakeholders' concerns regarding HASP that may be identified in upcoming stakeholder meetings. IEP/WPTF asserts that the CAISO may be unable to respond to certain issues, at least in Release 1, due to its software development schedule and urges the Commission to provide specific direction on whether the CAISO should implement a full-settlement hour-ahead market to the CAISO now, before such an alternative is precluded by software limitations.

55. Powerex disagrees with the CAISO's statements that a financially binding hour-ahead market offers few, if any, benefits in comparison to the cost, and that eastern markets do not have a financially binding hour-ahead market. Powerex asserts that these statements are insufficient to show that the CAISO's conceptual HASP proposal is just and reasonable. Further, Powerex argues that the CAISO's summary conclusions are not accompanied by an analysis of the benefits and burdens of such a market design.

56. Duke asserts that the CAISO's proposal unfairly discriminates against in-state generators by allowing imports the option of: (1) either being pre-dispatched for an entire hour (at an hour-ahead market clearing price), or (2) participating in the 5-minute imbalance energy market. Duke states that, in contrast, in-state generators may only participate in the 5-minute imbalance energy market and will not have the option to compete against imports for hour-ahead predispatch. As a result, Duke claims that the CAISO will predispatch system resources for an entire hour at the HASP clearing price, even if an in-state generator was willing to offer the same quantity of energy at the same or lower price.

57. In support of its assertion, Duke explains that the CAISO uses 5-minute incremental and decremental dispatches for load following as a substitute for purchasing regulation energy and as a result, in-state generators are exposed to multiple dispatch instructions in any given hour. According to Duke, this places mechanical stress on generators and makes in-state CAISO instructed imbalance energy a different and superior product to predispatched imported energy because of its ability to follow load. In addition, Duke asserts that when the uninstructed deviation penalties are implemented, in-state generation (not imports) will be exposed to an increased risk of penalties because they will be subject to multiple dispatch instructions within the hour. Accordingly, Duke

states that the Commission should direct the CAISO to modify its HASP proposal to allow in-state generators to submit bids for hour-ahead pre-dispatch under the same terms and conditions as system resources to eliminate the discriminatory nature of the HASP.

58. Duke also argues that the CAISO should implement an hour-ahead ancillary services market as part of the initial MRTU release which would allow the CAISO to optimize its ancillary services and enable sellers with generation resources to buy back their day-ahead sales when it makes financial sense to do so. Duke states that although the CAISO asserts that incorporating an hour-ahead or real-time re-optimization of ancillary services into Release 1 of MRTU would add unacceptable risk, the CAISO fails to explain in detail why this could not be accomplished. Duke asserts that the CAISO's opposition is driven, not by the implementation schedule, but by its opposition to legitimate arbitrage between the day-ahead and hour-ahead ancillary services markets. IEP/WPTF raises similar arguments about the buy-back of ancillary services after the day-ahead market.

59. IEP/WPTF states that failure to re-optimize energy and ancillary services following the day-ahead market and ignoring new bid information will likely result in inefficiencies and may increase the cost of both energy and ancillary services. IEP/WPTF notes that the hour-ahead process will be limited to replacing ancillary services capacity that becomes unavailable in real time or to procuring incremental capacity required due to changing system conditions. Therefore, IEP/WPTF states that capacity committed in the day-ahead market to provide reserves will not be available for economic dispatch in real time despite the fact that the supply offer may be economic.

60. IEP/WPTF further states that the elimination of a full hour-ahead settlement for ancillary services raises fundamental concerns about the transparency of the settlement for post day-ahead ancillary services and the ability for the bilateral market to function given the proposed limited functionality. IEP/WPTF notes that the CAISO's proposed HASP lacks a capacity payment for hour-ahead/real-time ancillary services providers. IEP/WPTF asserts that the proposal describes payment of a market clearing price for ancillary services but leaves open issues such as how the CAISO will set and apply such a market clearing price. IEP/WPTF asserts that it is unclear whether the highest opportunity cost will set the clearing price for all units, or whether the clearing price will be set by some other means.

61. Coral raises another issue concerning the elimination of the existing hour-ahead ancillary services capacity market. Coral states that it will significantly jeopardize the ability of generators otherwise willing to participate in the CAISO's ancillary services market to recover their fixed capacity costs in the event they are not dispatched by the CAISO and it may result in generating units withdrawing from the real-time ancillary services market. Coral asserts that this will degrade reliability on the grid, lead to an increase in the price of ancillary services, and cause the amount of stranded generating

capacity inside the CAISO control area to increase. Coral additionally states that the termination of the hour-ahead ancillary services market will be applied only to internal resources but not to imports, and thus will signal investors to locate outside California or form their own control areas.

62. Additionally, Coral asserts that despite Commission direction, the CAISO did not provide empirical data that compare the administrative cost of maintaining an hour-ahead market with the cost to the market that will result as a consequence of the termination of the ancillary services capacity market. According to Coral, the costs to the market that would result through the termination of the hour-ahead market would far exceed the administrative costs that it would take to maintain those markets. Coral suggests the Commission not accept the CAISO's "vague promise" to explore the reinstatement of the hour-ahead market for possible implementation after the February 2007 implementation of MRTU. Coral encourages the Commission to make a reasoned and measured evaluation of the CAISO proposal and modify that proposal as needed.

63. Powerex believes that achieving a proper HASP design requires working through complex issues such as scheduling timelines and interaction with other day-of bilateral markets inside and outside California, and therefore, blanket approval of the CAISO's conceptual HASP proposal, as-filed, is not appropriate at this time. Specifically, Powerex asserts that the CAISO's HASP proposal fails to adequately address the unique circumstances and concerns of importers.

64. In addition, Powerex argues that the CAISO's conceptual proposal fails to consider a market redesign that includes a pre-dispatch market clearing price solution, which according to Powerex is superior to the current pay-as-bid system. The pre-dispatch market-clearing price solution under consideration in the context of Amendment No. 66, and the CAISO's permanent solution to the intertie issues will be addressed in that proceeding. Given the potential effect of the pre-dispatch intertie solution on the HASP proposal, Powerex asserts that the CAISO should resolve issues in Amendment No. 66 prior to developing and implementing a HASP proposal. Powerex argues that the CAISO should adopt and implement the pre-dispatch market-clearing price solution as soon as possible, even before the planned implementation of MRTU in February 2007, and then develop a HASP proposal consistent with its solution.

Commission Determination

65. Because there are advantages and disadvantages to adopting either a full hour-ahead market or the CAISO's proposed HASP, the decision requires careful consideration and a pragmatic approach. Although a full hour-ahead market would allow for efficient re-optimization of energy, ancillary services and transmission, allow loads to adjust their day-ahead schedules, and eliminate incentives for gaming over the interties, it also has disadvantages such as requiring moving scheduling deadlines forward,

introducing additional market design complexity, increasing implementation and operating costs for the CAISO, and, according to the CAISO, delaying the implementation of MRTU beyond February 2007.

66. We note that many market participants support the HASP. While implementation of the HASP also has its advantages and disadvantages, we have to weigh those against the larger goal of correcting fatal design flaws in the CAISO markets that were identified in 2000 and continue to threaten the operation of the grid. We find that, on balance, the benefits of avoiding further delay in implementing LMP and a security-constrained financially-binding day-ahead market outweigh the disadvantages of implementing HASP in Release 1 of MRTU. Therefore, we approve the HASP proposal. The most important factor influencing our decision is getting in place the foundation for functioning markets that make efficient use of electric networks.

67. The CAISO states that it can implement MRTU by the scheduled date of February 2007 if the proposed HASP is accepted, while requiring a full hour-ahead market would significantly delay MRTU implementation beyond February 2007.[48] We find that the harm from further delaying the substantial benefits of MRTU would outweigh the net benefits gained from a full hour-ahead market.

68. Another important advantage of HASP is that it allows the completion of hour-ahead scheduling to move closer to real time; under HASP, hour-ahead scheduling would be completed 75 minutes before real time, while under a full hour-ahead market it would need to be completed 45 minutes sooner – *i.e.*, 120 minutes before real time.[49]

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[48] According to the CAISO, implementing the HASP rather than a full hour-ahead market in Release 1 of MRTU reduces design complexity, implementation costs, and ongoing operating costs for the CAISO and market participants. The CAISO states that implementation of a full hour-ahead market at this time poses a greater challenge and expense, due to the fact that the CAISO has proceeded, since the Commission's June 2004 Order approved the concept of a simplified hour-ahead market, to develop the MRTU systems, implementation schedule and testing plan based on incorporating the HASP design. To adopt a full hour-ahead market at this time, according to the CAISO, would require reworking the MRTU implementation plan and schedule to provide for integrating the features of a full hour-ahead market with other systems and data for the market re-design, as well as testing the entire end-to-end market and settlement process.

[49] The CAISO describes the sequence of steps under the HASP as follows: at T-75 Scheduling Coordinators submit desired self-schedule changes and real-time energy offers; the CAISO runs the Integrated Forward Market optimization to simultaneously clear congestion and energy and identify incremental ancillary services that may be needed; at T-45 the CAISO publishes pre-dispatch notices; in real time, the CAISO issues

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Completing the HASP close to real time would provide greater flexibility to market participants and allow schedule adjustments that more accurately reflect their real-time needs.

Amendment No. 66 Issues

69. We are sympathetic to comments regarding whether the HASP would adequately address the alleged intertie scheduling problems underlying CAISO's Amendment No. 66 filing in Docket No. ER05-718.[50] However, we believe that this question should be resolved when the CAISO files a proposed long-term solution as contemplated in our April 7, 2005 Order[51] in that docket. According to the CAISO, the scheduling problem prior to Amendment No. 66 involved participants submitting schedules of matching exports and imports that resulted in no change in net energy but, because of the CAISO's previous settlement rules, large amounts of uplift – about $18.5 million since October 1, 2004.[52] According to the CAISO, this was due to a lack of convergence between real-

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five-minute dispatch instructions. Energy bids submitted to the HASP by resources that are intra-hour dispatchable are not given pre-dispatch instructions and are only dispatched in real time. Increases in a Scheduling Coordinator's supply schedule that are accepted in HASP will be netted against the Scheduling Coordinator's demand deviation between real time and the Scheduling Coordinator's final day-ahead schedule for the purpose of assessing the Scheduling Coordinator's liability for uplift due to the CAISO commitment of resources in the HASP/real-time process.

[50] CAISO Amendment No. 66, Docket No. ER05-718, March 23, 2005.

[51] *California Independent System Operator Corporation*, 111 FERC ¶ 61,008 (2005).

[52] Prior to Amendment No. 66, CAISO would predispatch inc and dec export/import bids based on the anticipated real-time price. Specifically, the CAISO would pre-dispatch all import bids that are higher than the anticipated price, and all export bids that are lower than the anticipated price. To ensure that imports and exports are not harmed by the pre-dispatch when the anticipated and actual real-time prices differ, the CAISO settled such import and export transactions on a "bid or better" settlement rule. That is, each transaction would pay or receive the real-time market clearing price or its bid, whichever is more advantageous to the resource. In its Amendment No. 66 filing, the CAISO stated that the bid or better rule created incentives for Scheduling Coordinators to submit large quantities of offsetting inc and dec bids that largely offset one another, so that no energy is actually received or provided. But to the extent that one of the matched pair settles at the real-time price and the other settles at its bid, the Scheduling Coordinator receives a profit, even though it neither provides nor receives any net energy. The CAISO estimated that such offsetting bids have resulted in about $18.5 million in uplift costs since October 1, 2004.

time market clearing prices and the prices at which external bids are predispatched, due largely to changes in expected loading and resource deviation conditions between the time that predispatch occurs and real-time dispatch. The fact that hour-ahead import and export scheduling decisions have been based on anticipated prices that often differed from actual settlement prices, and also that imports often settled at different prices from exports, could create incentives to engage in these types of scheduling practices. A full, financially binding hour-ahead market would be one way to remove the incentives to engage in these scheduling practices, since exports and imports would settle at the same price. And the additional cost for system development of a full hour-ahead market – between $150,000 and $300,000, according to the CAISO – is small compared to the millions of dollars in uplift that it would save.

70. However, other options may also be able to address the uplift problem, and we directed the CAISO and its stakeholders to consider a full range of options. Our April 7, 2005 Order in that docket accepted the CAISO's Amendment No. 66 proposal to adopt a pay as bid rule to address these problems, but only for an interim period to expire no later than September 30, 2005. The order also directed the CAISO's Division of Market Analysis to present the CAISO's plan for a long-term solution. The CAISO has not yet presented us with a proposed long-term solution in that docket, and the HASP proposal in this docket does not include a final proposal for settling exports and imports in the hour-ahead time frame. Thus, as the CAISO notes, the long-term solution to the Amendment No. 66 problem is likely to require changes to the HASP proposal offered in this docket. We will review the CAISO's proposed long-term solution to the scheduling problem in Docket No. ER05-718 when it is filed and we will make no prejudgments on this issue in this order.

Effect of HASP on Ancillary Services

71. We agree with IEP/WPTF, Dynegy/Williams and Duke that the HASP would take away the current ability of generators selling ancillary services in the day-ahead market to buy-back their obligations in a centralized, hour-ahead market. We agree that this feature of the existing market is beneficial for both generators and customers by allowing adjustments in the hour-ahead time frame to day-ahead ancillary service schedules so that lower cost providers of ancillary services can replace higher cost providers. Such adjustments can also allow generators with lower energy costs to be relieved of their ancillary service obligations and thus, be available to produce energy at a lower cost than would otherwise be available. The HASP takes away the convenience of making such transactions in a CAISO-operated centralized hour-ahead market. We assume that the CAISO has accounted for this in its assessment of cost and benefits of implementing HASP.[53] However, under HASP, generators could transfer their ancillary service

[53] We note that CAISO has failed to fully comply with the Commission's prior (continued…)

obligations to other qualified generators through bilateral transactions, and as noted above, we conclude that the advantages outweigh the disadvantages of implementing HASP at this time.

72. Commenters also raise concerns about the compensation rules for ancillary services scheduled in the HASP. Coral complains that the HASP proposal, unlike the existing hour-ahead ancillary services market, would fail to fully compensate generators scheduled in the hour-ahead time frame for the costs that they incur to be ready to produce energy on short notice, such as the costs to keep their fans, heaters and pumps operational. Based on our review of the CAISO's filing, it is not clear to us whether generators scheduled for ancillary service in the HASP would be guaranteed recovery of such costs (which appear to be start-up and minimum load costs). We conclude that such generators should be guaranteed such cost recovery, for the same reason that generators scheduled in the day-ahead market and the day-ahead RUC are guaranteed recovery of their start-up and minimum load costs. That is, when a generator's offer to supply is accepted, the CAISO must guarantee that the generator's total compensation will at least cover its bid costs. We direct the CAISO to provide for such cost recovery in the tariff that it files to implement MRTU.

73. With respect to IEP/WPTF's concerns that the CAISO's proposal is not clear about whether generators scheduled to provide ancillary service in the HASP would be paid the same market clearing price or different amounts depending on their energy bids (and the resulting opportunity costs), we conclude that all suppliers providing an ancillary service at a given area and time should receive the same market-clearing price, just as all suppliers of energy at a given area and time receive the same market-clearing price. We direct the CAISO to include such a pricing rule in its MRTU tariff filing. Paying market clearing prices encourages suppliers to submit bids that reflect their actual costs, and thus, the suppliers selected are more likely to be those with the lowest actual costs. By contrast, paying suppliers based on what they bid encourages suppliers to adjust their bids so as to increase the amount that they are paid, and thus, the suppliers selected in the auction may not be those with the lowest actual costs. Of course, suppliers in different areas separated by transmission constraints may legitimately receive different prices, but suppliers that are not separated by transmission constraints should receive the same price.

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order instructing the CAISO to submit, as part of this filing, a study on the benefits and costs of a full hour-ahead versus simplified hour-ahead market (*e.g.*, the CAISO did not quantify the cost of inefficiencies with not having a binding hour-ahead market associated with re-optimizing energy, ancillary services and transmission service in the hour-ahead time frame). Failure to comply in the future may result in rejection of the filing.

ETC Capacity

74. We agree with Powerex that the HASP will reduce the efficiency with which transmission capacity is allocated, but we think that the magnitude of this problem is less significant than Powerex claims. Powerex argues that many ETC rights holders do not release unscheduled transmission capacity until after the day-ahead market closes. A full hour-ahead market or a pre-dispatch process with a market clearing price would allow ETC capacity to be made available after the day-ahead market and to be allocated efficiently through the pricing system in the hour-ahead time frame. However, the Commission's February 10, 2005 Order [54] accepted the CAISO's proposal for honoring ETCs, which provides for release of unscheduled capacity for ETC internal resources in the day-ahead market. Thus, the transmission set-aside discussed by Powerex would be limited to ETCs on the interties. In addition, any unused ETC intertie capacity would be available in the HASP, although in periods when demand exceeds the available unused capacity, the HASP may not allocate the capacity efficiently, since HASP would not include binding hour-ahead market clearing prices.

Software Limitations

75. We recognize the concerns raised by IEP/WPTF and Dynegy/Williams that the design and implementation of MRTU software should not preclude the CAISO from properly addressing stakeholders' concerns. Also, we agree with Duke that the CAISO has not provided a detailed explanation as to why incorporating an hour-ahead or real-time re-optimization of ancillary services into Release 1 of MRTU would add unacceptable risk to the project schedule. We believe that it is important for the CAISO to provide descriptive explanations to both the Commission and to its stakeholders so that the technical difficulties relating to software implementation are clearly understood by all concerned parties.

76. We recognize the business reality that based on prior guidance from this Commission in June 2004, the CAISO entered into contracts with software vendors which stipulate assumptions for the MRTU design and establish deadlines, and that to introduce a change in direction results in additional costs. We note, however, that subsequent Commission guidance in September 2004 stated that the Commission needed additional information with which to make a determination on this issue, and directed the CAISO to make a compliance filing within 30 days. At that point, the CAISO should have ensured with their software vendor that this flexibility was retained, pending the CAISO's filing and Commission determination. The CAISO's choice not to ensure that

[54] *California Independent System Operator Corp*, 110 FERC ¶ 31,113 (2005).

software functionality, and not to make that compliance filing until May 2005 will further delay critically needed market redesign if the Commission determines that a full hour-ahead market its advantageous.

77. While we recognize that software design is made more difficult if it is a moving target, we have also repeatedly urged the CAISO to retain flexibility and a modular approach in its software development in order not to repeat the problems caused by past software limitations and to allow for necessary design modifications. The CAISO's failure to retain this flexibility forces this Commission to now weigh software development and testing as a factor in choosing a proper market design when we should be rendering a decision on this matter based solely on the best functionality for California's energy markets. In essence, the CAISO's failure in this regard has created additional unnecessary problems that hinder the creation of a proper market design.

78. Nonetheless, the CAISO urges the Commission to defer the implementation of an hour-ahead market for a subsequent MRTU release even if the Commission determines that a full hour-ahead market is necessary.[55] As discussed elsewhere in this order, we find the CAISO's HASP proposal to be appropriate for Release 1 of MRTU, but note that the CAISO will likely need to modify the HASP in implementing an appropriate long-term solution to the Amendment No. 66 issues. We direct the CAISO to work with stakeholders in crafting a solution and will consider necessary changes when they are filed.

Alleged Discrimination Against In-State Generators

79. The Commission recognizes Duke's assertion that the CAISO's proposal unfairly discriminates against in-state generators by allowing imports the option of either being predispatched for an entire hour at an hour-ahead market clearing price, or participating in the 5-minute imbalance energy market. However, as discussed above, the Commission

[55] The CAISO states that integration and testing of a full hour-ahead market after the start-up of the new MRTU markets (*i.e.*, Release 2) would be preferable because (1) it would eliminate any risk to the existing MRTU implementation schedule and cost impacts associated with delays in the overall MRTU schedule, and (2), it would not be any more costly than incorporating it into the MRTU design now from the perspective of costs related to the settlements system. The CAISO concludes that, if the Commission were to determine that a full hour-ahead market is ultimately preferable to the HASP proposal, implementation of a full hour-ahead market would best be deferred to a subsequent MRTU release.

will not require the CAISO to incorporate an hour-ahead market in Release 1, and in the absence of a financially-binding hour-ahead market, there will not be an hour-ahead settlement for in-state generators.

80. As stated in the September 2004 Order, we believe that a financially binding hour-ahead market and its associated products provide certain benefits to the market, particularly given the hourly scheduling requirements associated with most imports into and exports out of the CAISO.[56] As discussed above, we approve in this order the proposed HASP, but encourage the CAISO to work closely with its stakeholders in determining whether an hour-ahead market is the appropriate solution to the issues raised in Amendment No. 66, and whether the CAISO should work to incorporate it in its initial Release of MRTU.

81. In regard to Duke's assertion that multiple dispatch instructions in any given hour place mechanical stress on generators and make imbalance energy a different and superior product relative to predispatched imported energy, the Commission believes that Duke will be able to submit energy offers that, under MRTU, will be fully compensatory notwithstanding the five-minute dispatch interval. Additionally, the Commission notes that generators can be scheduled at a constant output at a known price for an entire hour by bidding below the applicable LMP (or by self-scheduling) in the day-ahead market. In addition, generators can be dispatched at a constant output level for an entire hour by self-scheduling in the real-time market. Lastly, the Commission notes that it has previously approved five-minute dispatch intervals for the CAISO as well as for other wholesale power markets.[57]

Requests for Additional Information

82. The Commission recognizes stakeholders' concerns regarding the lack of details included in the CAISO's proposal. Although PG&E believes that many other details of the HASP are critical to determining whether it will operate in a just and reasonable manner, we re-emphasize that the current proposal presents only concepts . We agree with stakeholders that there are details omitted in the current proposal that will have to be resolved through a stakeholder process.

83. In regard to Metropolitan's concerns, we encourage the CAISO to work with Metropolitan in developing written documentation that explains how loads that are typically independent of prevailing weather conditions, such as State Water Project's pump loads, will be incorporated into the CAISO IFM optimization.

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[56] *See* September 2004 Order at P 44.

[57] *See California Independent System Operator Corp.*, 105 FERC ¶ 61,091 (2003).

84. We acknowledge SVP's concern about how the CAISO will integrate MSS contracts with the HASP proposal and note that SVP is content with the CAISO's involvement in discussions so far. We encourage continued discussion on this matter.

85. In summary, we conclude that while there are disadvantages to the HASP and advantages to a full hour-ahead market, we will accept the HASP with the modifications noted above, to prevent a delay of the February 2007 implementation date for MRTU. We note that we await the CAISO's filing of a long-term solution to the issues raised in Amendment No. 66.

D. Proposed Market Power Mitigation under Revised MRTU Proposal

Resource Adequacy

86. In the October 2003 Order, the Commission noted the interrelationships among the energy market design, the system for congestion management, resource adequacy provisions, and the means for mitigating market power. In particular, the Commission stated that "resource adequacy measures adopted by the region must work together with the region's market power mitigation measures."[58] To date, the CPUC has not issued a final ruling regarding resource adequacy. However, the CAISO represents that several important aspects of the state's resource adequacy program have been decided that will provide sufficient incentives for infrastructure investment in California and sufficient opportunities for suppliers to recover their going forward costs by entering into both short- and long-term supply arrangements with LSEs.

87. Specifically, beginning June 1, 2006, all LSEs will have a year-round obligation to procure sufficient capacity to serve their load, plus a planning reserve margin of 15-17 percent. All resources procured by LSEs to satisfy their resource adequacy obligations must be deliverable, both on a system-wide and local level. Finally, capacity designated as satisfying an LSE's resource adequacy obligation carries with it an obligation to participate in the CAISO's day-ahead and RUC markets.

88. The CAISO states that its MRTU design anticipates being able to incorporate the resource adequacy-based must-offer obligation in the CAISO tariff. The CAISO views this as necessary for two reasons: (1) as a means to standardize the availability rules applicable to resource adequacy resources; and (2) to place the enforcement of those rules with the CAISO as the entity that is most affected by and will most closely observe day-to-day compliance with the must-offer obligation.[59]

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[58] October 2003 Order at P 274.

[59] The CAISO's White Paper *Proposed MRTU Market Power Mitigation*

(continued…)

89. The CAISO further states that it expects to perform an integral part in defining the necessary locational capacity requirements, deliverability of resources, and total inter-tie capacity that may be relied upon for resource adequacy purposes. The CAISO also states that, because the CAISO will be involved at this level of detail, it appears most parties understand and agree that the CAISO is the appropriate party to receive the requisite LSE reports that indicate the level of compliance to forward procure sufficient capacity.[60]

Overview of the CAISO's Market Power Mitigation Proposal

90. As a result of input from stakeholders and LECG, and in response to concerns raised by the January 18 Guidance Letter, the CAISO has revised its proposed mitigation measures in its MRTU proposal. In this Revised MRTU proposal, the CAISO proposes to eliminate System Automatic Mitigation Procedures (AMP), to replace the Local AMP with new local market power mitigation measures, and to implement a plan to change the level of bid caps on its energy and ancillary services markets over a three year period. The CAISO also proposes to replace the current must-offer obligation with a day-ahead and real-time must-offer obligation for resources identified by the CPUC as serving a resource adequacy contract. The CAISO states that, while it views the resource adequacy must-offer provision as a critical component of the market power mitigation design, it is not seeking approval of this proposal from the Commission given that the precise details of this obligation are not fully resolved. The specific market power mitigation concepts for which the CAISO is seeking approval from the Commission at this time therefore include the following:

- Retention of the existing $250/MWh energy bid cap and -$30/MWh bid floor on day one of implementation of Release 1 of MRTU and implementation of a transition plan to raise the energy bid cap in annual increments of $250/MWh over a three year period to an ultimate level of $1,000/MWh.
- Maintaining the $250/MWh energy bid cap as a soft cap until the energy bid cap is raised to $500/MWh when it will become a hard cap.[61]
- Retention of the existing $250/MWh ancillary service bid caps (including RUC availability bid caps) and implementation of a transition plan that would lower the ancillary service bid caps in annual increments of $50/MWh to an ultimate level of $100/MWh in step with the energy bid cap transition to $1,000/MWh.

Provisions, April 29, 2005, Attachment B to the CAISO's MRTU Conceptual Filing, at 11.

[60] *Id* at 28.

[61] A soft bid cap allows a seller to bid (and be paid) higher than the cap but not set the market clearing price.

- Elimination of System AMP.
- PJM Interconnection, LLC (PJM)-like local market power mitigation of energy bids.
- Compensation for frequently mitigated units (or FMUs).
- Local market power mitigation for RUC availability bids.
- Deferral of a more extensive reserve shortage scarcity pricing approach to a later release of MRTU.
- Changes to the Day-Ahead Market Process.

Commission Determination

91. Our determinations on the CAISO's market power mitigation proposal, as discussed below, are premised upon the plan for resource adequacy that the CPUC is currently considering. To the extent the CPUC's final decision on resource adequacy is markedly different from its proposed plan, we may revisit these determinations.

Energy Bid Cap and Bid Floor

92. The CAISO proposes to maintain its existing $250/MWh soft bid cap for energy bids and its existing -$30/MWh soft bid floor for day one of Release 1 of MRTU implementation. Additionally, the CAISO proposes to include provisions in its MRTU Tariff filing obligating the CAISO to file with the Commission after 16-months of operation under LMP, a report: (1) summarizing the performance and competitiveness of the new market design for the first 12-months of operation; (2) providing additional prospective analyses on market conditions; and (3) including a recommendation of whether market conditions are conducive to raising the energy bid cap to a $500/MWh hard cap. The assessment would include: (1) an overall competitive assessment of the spot energy market under the first year of LMP operation; (2) projected future supply margins to assess whether regional supply margins will be sufficiently high to support adequate competition; and (3) the status of demand response programs. The CAISO states that, absent a finding that the spot market for the following year(s) does not meet the criteria, which the CAISO will determine through market performance and prognosis reports, the CAISO will recommend raising the energy bid cap in annual increments of $250/MWh until it reaches a $1,000/MWh hard cap.

93. The CAISO asserts that its proposal to file its analysis and bid cap recommendation with the Commission annually will provide the Commission and stakeholders with a forum to address this issue and a detailed record of market performance and prognosis. The CAISO states that it recognizes that a higher bid cap may be more effective in promoting demand response and encouraging forward

contracting for energy; however, it does not believe that raising the energy bid cap on day one of Release 1 of the implementation of LMP is appropriate given the uncertainties of the new market design and new resource adequacy program.

94. Furthermore, the CAISO states that the Commission's concern about the $250 energy bid cap is addressed by three elements, which provide the Scheduling Coordinator for the resource with the ability to manage the resource without having to use high energy bids. These elements are: (1) a contingency only flag on ancillary service bids; (2) self-scheduling of preferred operating levels without bid prices; and (3) a mechanism for managing use-limited resources that are subject to must-offer obligation.

95. The CAISO states that the CPUC has adopted specific goals for demand response for each of the investor owned utilities, approved the 2005 Response Goals, Programs, and Budgets, and been working on adopting default critical peak pricing rates, advance metering infrastructure, and real time pricing. The CAISO states that these programs are either price responsive or reliability-triggered. The CAISO contends that it has been closely following the demand response initiatives in California. Additionally, the CAISO notes that it still maintains its Participating Load Program, which allows loads to participate in the non-spin ancillary services market.

Comments

96. Duke and Calpine join IEP/WPTF in its recommendation of a bid cap for energy no lower than $1,000/MWh commencing with the implementation of the MRTU Release. Without the higher bid cap, Duke contends that LSEs will have strong incentives to circumvent or undermine their resource adequacy obligations, because they can rely upon heavily mitigated day-ahead and real-time markets. Calpine states that a day-one MRTU bid cap of $1,000/MWh would establish more realistic expectations for marketers and LSEs regarding the true opportunity costs of not having long-term installed capacity markets.

97. IEP/WPTF point out that the conditions that led to the imposition of the $250/MWh cap are no longer relevant and that, by proposing to retain the current abnormally low cap, the CAISO fails to recognize that market conditions have already changed. IEP/WPTF and Calpine contend that raising the bid cap will stimulate demand response and ensure that buyers have sufficient incentive to hedge forward. Furthermore, IEP/WPTF argue, the CAISO's proposed safety-net bid caps will leave certain sellers unable to recover their fixed and long-term costs of operation. IEP/WPTF state that the Commission must reject the CAISO's proposal to the extent that the CAISO's evaluation to raise the bid caps depends on the amount of forward contracting or actual hedging practices of LSEs.

98. The CEOB agrees with the CAISO's position that although bid caps higher than $250 should be the end goal of the CAISO markets, the impediment to development of generation infrastructure has been an inability to get long term contracts, not the existence of a $250 bid cap. Instead of continuing widespread suppression of valuable spot pricing signals, Sempra Energy urges the Commission to recognize that all market participants would be better served if LSEs were to manage most of their price and supply risks in forward markets, either through forward contracts or ownership of deliverable, physical resources.

99. The CPUC supports the CAISO's proposal to raise the bid caps, however, the CPUC also believes, like the CAISO, that it is appropriate to wait to raise the bid caps until there is certainty that the LMP system is properly operating. Further, the CEOB states that describing the process as being a "three step process" (rather than a three year transition) would remove uncertainty regarding what would happen in the case of a determination of the existence of non-competitive conditions.

100. San Francisco opposes the proposed mechanism to potentially increase the system-wide bid cap by $250/MWh increments annually after the first year of MRTU start-up and believes that California needs more than a year under MRTU before an assessment of forward supply margins could begin to indicate competitive conditions sufficient to justify relaxing system-wide LPM.

101. SoCal Edison and PG&E believe the CAISO's market mitigation measures under MRTU are reasonable. PG&E states that there may be a need to re-evaluate in the event that measures are not taken to address resource adequacy concerns.

102. The CAISO has proposed that the energy bid cap on day one of Release 1 of MRTU implementation should be a soft cap set at $250/MWh with accepted bids over $250/MWh paid as bid through an uplift charge but not allowed to set the market clearing price. The CAISO states that it is appropriate to maintain a soft bid cap for energy in the event that gas prices rise throughout the west; the soft cap provides for bids above $250/MWh to be cost-justified, in which case the CAISO would want to accept bids above the cap. The CAISO further states that it plans to make the bid cap a hard cap when it is eventually raised to $500/MWh because a cap at that level should not impose similar cost recovery issues.

103. In its comprehensive review of the CAISO's proposed market redesign, LECG notes that, in the event of higher gas prices and/or a shortage of capacity in the Western Electricity Coordinating Council (WECC), a $250/MWh bid cap, whether hard or soft, could result in California bearing the brunt of the shortage since such a low bid cap could result in the CAISO being outbid for imports. Moreover, as the Commission stated in

the January 18 Guidance Letter, a low bid cap could also have the effect of dampening price signals for demand response programs and discouraging forward contracting for energy.

Commission Determination

104. We agree with the CAISO, LECG and intervenors that the bid cap should be ultimately increased to $1000/MWh. We disagree, however, with the CAISO's proposal for day one of MRTU implementation of a soft cap of $250/MWh. As the CAISO has pointed out, gas prices could rise to a level that would justify competitive prices above $250/MWh. Rather than suppressing the market clearing price by regulatory fiat, it would be more appropriate to allow all competitive bids to clear supply and demand and send transparent price signals to encourage demand response, market entry and forward contracting. In addition, allowing the CAISO to procure out-of-market energy at prices that exceed the soft cap may provide unintended incentives for sellers to refrain from bidding into the CAISO market in order to receive the higher out-of-market payments. Accordingly, the initial bid cap should be a hard cap set at $500/MWh. Twelve months after MRTU implementation, the energy bid cap shall automatically be increased to $750/MWh, unless the CAISO makes a filing with the Commission showing that its markets are non-competitive and the Commission supports this assessment. This process will be repeated twelve months later, and the bid cap will automatically increase to an ultimate level of $1000/MWh, unless the Commission supports the CAISO's analysis that the markets are non-competitive. Bid caps are meant to serve as circuit breakers to supplement, if necessary, properly constructed mitigation.

Ancillary Services and RUC Availability Bid Caps

105. The CAISO proposes to keep the bid caps for ancillary services at the current hard cap level of $250/MWh for day-one implementation of MRTU. The CAISO also proposes a $250/MWh hard cap on RUC availability bids. However, the CAISO proposes to reduce the ancillary services and RUC availability bid caps by $50/MWh per year, concurrently as the energy bid cap transitions to $1,000/MWh, until the ancillary services and RUC availability bid caps reach $100/MWh. The CAISO states that ancillary services bid caps may decrease to $100/MWh sooner (than the energy bid cap reaching $1,000/MWh) if ancillary services markets are found to be non-competitive under more granular procurement regions.

106. The CAISO asserts that lower (less than $250/MWh) ancillary services bid caps would be more in line with the ancillary services bid cap levels in PJM and ISO-NE. Furthermore, the CAISO notes, ancillary services prices will automatically reflect the opportunity cost of providing reserves and, therefore, unlike today's market design, it will not be necessary for market participants to incorporate opportunity costs into their ancillary service capacity bids.

Comments

107. Sempra Energy questions the wisdom of establishing different levels of bid caps for ancillary services and RUC from the level of the energy bid cap. Sempra Energy states that these products will usually command a lower price in the market than energy would for a given time and location, but suppressing the prices for these products by regulatory fiat is likely to distort the price equilibrium produced by the MRTU design, which is designed to co-optimize procurement of energy and ancillary services. IEP/WPTF opposes the CAISO's proposal and state that the ancillary services cap, at a minimum, should be set to the energy cap. Moreover, IEP/WPTF state, lowering the ancillary services bid cap level is inconsistent with creating the proper incentives to address ancillary services bid insufficiency.

108. IEP/WPTF states that the CAISO provides no justification for a stepwise reduction in the RUC availability payment. As already noted by the Commission, IEP/WPTF reiterates that the RUC availability payment adjustment should be contingent upon the creation of a capacity market and the creation of unit commitment cost compensation that closely matches costs. Until the Commission finds that these conditions have been met, IEP/WPTF recommends that the currently-approved $250 bid cap stand.

Commission Determination

109. The CAISO argues that a $100/MWh cap would be more in line with other ISOs; however, the CAISO lacks a capacity market and, initially, a $1000/MWh energy bid cap, which other ISOs such as PJM have to supplement the $100/MWh ancillary services and RUC availability bid caps. Further, by proposing to decrease the level of the ancillary services and RUC availability bid caps, the CAISO has made a collateral attack on prior Commission orders. The Commission has already addressed the CAISO's prior proposals of a $100/MWh or $150/MWh bid cap. The Commission's October 2003 and June 2004 Orders determined that the bid caps for ancillary services and RUC availability should be $250/MWh.

110. In the October 2003 Order, the Commission found that the proposal to compensate resources with a capacity payment under RUC is similar to the procurement of capacity in the ancillary services market. As a result, the Commission concluded that the CAISO should be required to set the RUC capacity bid cap to the current $250/MWh bid cap to ensure comparable compensation for capacity.[62] In the June 2004 Order, the Commission stated that it was not persuaded by the CAISO that the RUC availability bid cap should be lower than the $250/MWh bid cap accepted in the October 2003 Order. Further, the

[62] October 2003 Order at P123.

Commission was not convinced that the procurement of RUC capacity and ancillary services are substantially different products, which justify a lower bid cap. The Commission also noted that, in its initial filing, the CAISO recognized the RUC process as a reliability backstop for the CAISO to meet its system load forecast and reserve requirements in accordance with North American Electric Reliability Council (NERC) and WECC. As a result, the Commission rejected the CAISO's proposal to lower the availability payment because the CAISO did not demonstrate that the RUC capacity market is substantially different from the ancillary services market.[63]

111. The Commission agrees with intervenors that the CAISO has not provided justification for decreasing the level of the ancillary services and RUC availability bid caps. Therefore, we reject the CAISO's proposal to implement a transition plan to decrease ancillary services and RUC availability bid caps annually. We reaffirm that the CAISO should retain the $250/MWh bid caps for ancillary services and RUC availability, as determined in previous orders. As California and the CAISO progress toward resource adequacy and possibly capacity markets, the CAISO should reassess the ancillary services and RUC availability bid caps. Similarly, should structural or market issues arise in California that warrant the lowering of caps, the CAISO should propose revised caps.

112. As discussed above, the Commission's instant decision and that in the October 2003 and June 2004 Orders are based on the CAISO's expectations for resource adequacy. We continue to encourage the CPUC's efforts to ensure adequate resources are available to the CAISO and expect that with such resource adequacy measures in place (as are being contemplated by the CPUC) that the need for RUC, and thus the RUC bid caps, may be eliminated.

System AMP

113. The CAISO proposes to eliminate System AMP for Release 1 of MRTU implementation. The CAISO states that it may propose to re-implement system AMP at some later date upon implementation of a higher bid cap, an effective reserve shortage scarcity pricing mechanism and a pivotal supplier test if it is determined that additional safeguards against the exercise of system market power are necessary.[64]

[63] June 2004 Order at P 65.

[64] Software functionality for possible future implementation of System AMP will be maintained.

Comments

114. No party objects to this proposed provision.

Commission Determination

115. In the January 18 Guidance Letter, the Commission found that the CAISO's system AMP proposal had the potential to suppress prices during system-wide shortage periods, rather than let them rise to encourage reductions in demand and additional investment in supply, and reinforce contracting. The Commission noted that the CAISO proposed System AMP mitigation along with a $250/MWh bid cap, but omitted measures that other Regional Transmission Organizations (RTOs)/ISOs had in place to ensure appropriate price signals during shortages. Thus, the Commission requested that the CAISO demonstrate the need for System AMP, consistent with prior Commission orders. In response, the CAISO now proposes to eliminate system AMP for Release 1 of MRTU implementation. The Commission accepts the CAISO's proposal to eliminate system AMP.

Local Market Power Mitigation

116. The CAISO seeks to replace the current local market power mitigation measures and explains the mechanics of its new local market power mitigation proposal as follows.

117. In order to determine Reliability Must-Run (RMR) units' pre-dispatch levels and identify the units subject to local market power mitigation, the CAISO's proposed integrated forward market will perform two runs of the optimization software, which will be compared to determine when to mitigate for local market power, and will determine which resources will be subject to local market power mitigation. The first run will be based on the former zonal model, which will take into account constraints between existing zones on the system.[65] The second run will consider all network constraints in the full network model.[66] Local market power mitigation would apply to those resources that show an incremental dispatch level change from the first and second runs, indicating that they were dispatched out of economic merit order as a result of transmission congestion.

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[65] The first run will consider only "competitive network constraints" (initially defined by the CAISO as the current inter-zonal interfaces plus local constraints out of local generation pockets).

[66] The CAISO will consider all transmission paths, other than those defined as "competitive" above, as non-competitive, but will periodically evaluate those paths based on a forward-looking assessment.

118. The CAISO proposes to apply what it calls a "PJM-style" cost-capping approach for mitigation of local market power. Under this approach, if the CAISO must dispatch a generating unit as a direct result of congestion in the forward or real-time markets, as described above, the CAISO will dispatch the resource and determine locational marginal prices based on the resource's default energy bid.[67] The CAISO proposes to allow resource owners to choose among three options for determining their default energy bids:

- Cost-plus-10 percent, including an adjustment for fuel price changes.
- A weighted average LMP at the same location during the preceding 90 days when the resource was dispatched for energy in economic merit order, *i.e.*, dispatches other than those when the resource was dispatched up to alleviate a non-competitive transmission constraint.[68]
- An amount negotiated with the Independent Entity responsible for determining Default Energy Bids.

Under the proposed cost-capping mechanism, the unit's energy bid curve above the level dispatched in the first run would be automatically mitigated to the supplier's default energy bid. While the bids of out of merit generators are mitigated, such generators receive a price equal to the greater of the default energy bid or the locational marginal price.

Comments

119. San Francisco maintains that, when competition cannot set market prices because transmission constraints prevent access to competitive supply, energy, and capacity from pivotal suppliers with market power must be subject to cost-based rates. On the other hand, IEP/WPTF recommend that the Commission reject the CAISO's proposed cost-

[67] Default Energy Bids for most thermal units will be cost-based bids equal to the incremental cost of the unit plus a ten percent adder.

[68] In order for a resource owner to be eligible to choose this option, the number of MWh the unit was dispatched in economic merit order during the preceding 90 days must be at least 50 percent of the total MWh the resource was dispatched during that time period. In other words, if the resource was dispatched to alleviate non-competitive constraints for more than 50 percent of the unit's total MWh dispatched in the preceding 90 days, it must choose one of the other two options. The CAISO states that the 50 percent criteria is designed to serve as a screen for determining whether a resource owner has an incentive to bid strategically high during unmitigated hours to drive up the LMPs used to calculate its default bid. The CAISO finds that if the unit typically has less than half of its output mitigated, it has less of an incentive to strategically drive up its LMP in hours when the unit is not mitigated.

based approach and, instead, adopt a Conduct and Impact (C&I) bid evaluation system, along with a locational capacity market that provides opportunities for resources to be appropriately valued for providing capacity to the system.

120. The CPUC and PG&E support the CAISO's proposal to implement PJM-style bid mitigation so that units with local market power are mitigated, at their choice, to variable cost plus 10 percent, a weighted average LMP, or a negotiated amount. However, the CPUC believes that if a generator chooses a negotiated amount, it must agree to make a full cost demonstration to justify the negotiated price.

121. Duke urges the Commission to defer action on whether changes to the local market power mitigation measures are appropriate until the amended market design and resource adequacy mechanism are more fully developed. Metropolitan believes that without a methodology for determining the competitiveness of a transmission path, the CAISO's local market power mitigation proposal cannot be adequately considered.

Commission Determination

122. In the January 18 Guidance Letter, the Commission discussed recent market design precedent in existing RTOs/ISOs. By identifying different mitigation measures that have been approved for other RTOs/ISOs to prevent the exercise of market power, the Commission allowed the CAISO to decide which market design precedent to follow. As stated in the MRTU Conceptual Filing, the CAISO has adopted a PJM-style approach to local market power mitigation. Previously, the CAISO departed from the PJM model and limited a resource owner's bid mitigation options to cost-plus-10 percent; however, the CAISO proposes in the instant filing to allow a resource owner to choose between three bid mitigation options, as is allowed in PJM. Because the CAISO has mirrored PJM's approved market design package, the Commission approves the CAISO's concepts for local market power mitigation measures.

Pivotal Supplier Test

123. The CAISO proposes to develop a pivotal supplier test similar to that approved for use in PJM.[69] The CAISO states that PJM's pivotal supplier test requires that if there are not three or less jointly pivotal suppliers in meeting local reliability needs, then units in that location would be exempt from the PJM local market power mitigation procedures.[70]

[69] The January 25, 2005 Order states that the Commission intends to institute an investigation into PJM's pivotal supplier test under section 206 of the Federal Power Act. *PJM Interconnection, LLC*, 110 FERC ¶ 61,053 at P 87 (2005) (*PJM Order*).

[70] Four or more jointly pivotal suppliers are considered competitive as are zero

(continued…)

The PJM proposal provides that, generally, the generation supply in a locality shall not be deemed sufficiently competitive to warrant suspending offer price caps when three or fewer generation suppliers are jointly pivotal because all are required to serve the load in the locality.[71] The CAISO notes that PJM proposes to incorporate the pivotal supplier test into its market software so that it can run dynamically for each hour; however, PJM acknowledges that it will take 12-months to develop and implement this functionality.

124. The CAISO states that it will work with stakeholders in reaching consensus on a specific methodology for a pivotal suppler test for both the day-ahead and real-time markets. Due to the complexity of such a test, the CAISO is not proposing it for day-one implementation, but plans to incorporate a pivotal supplier test in a later release of MRTU. Until the implementation of a pivotal supplier test, the CAISO states that it will utilize periodic off-line procedures for assessing whether transmission paths currently designated as non-competitive are in fact competitive and therefore could be exempt from local market power mitigation.

125. The CAISO states that the first assessment of competition to relieve congestion on specific paths will be performed prior to day-one implementation of MRTU. The results of the first assessment, the CAISO asserts, will be used to designate paths as competitive or non-competitive for application of local market power mitigation on day one of MRTU. The CAISO notes that such assessments will be performed annually until a pivotal supplier test is implemented.

Comments

126. Metropolitan believes that without a methodology for determining the competitiveness of a transmission path, the CAISO's market power mitigation measures cannot be adequately considered.

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pivotal suppliers.

[71] A pivotal supplier is a supplier whose output is required in order to meet relevant load. Declaration of Joseph E. Bowring P 49 and 50, PJM Filing in Docket No. EL03-236-000, September 30, 2003. PJM provides the following example: If there are five suppliers in an area, each with 100 MW of generation capability and the load in the area is 500 MW, all five suppliers are individually and jointly pivotal. If load is 400 MW, no single supplier is pivotal, but two suppliers are jointly pivotal. If the load is 300 MW, no single supplier is pivotal, but three suppliers are jointly pivotal. The measure of pivotal is [(Total Supply - Participants' Supply)/(Total Load)]. When this measure is less than 1.0, the relevant participants in the numerator are pivotal. *Id.* at P 50.

Commission Determination

127. We disagree with Metropolitan's assertion that the CAISO does not have a methodology to assess a path's competitiveness. The CAISO has stated that it will undertake periodic studies to determine whether a path is competitive or not. We expect that the details of this methodology used in these studies will be provided in the November tariff filing. While a pivotal supplier test that will dynamically evaluate competitive paths on an hourly basis will be an enhancement, it is not absolutely necessary for Release 1 of MRTU implementation.

Local Market Power Mitigation for RUC Availability Bids

CAISO's July 22 Filing

128. Under the RUC process,[72] the CAISO proposed to provide resources with an availability payment for each MWh of RUC capacity that is not awarded ancillary service or dispatched for energy in the hour-ahead or real-time markets. The RUC process would allow resources to bid for RUC availability as a component of their bids into the Integrated Forward Market, up to a cap of $100 per MWh. The CAISO proposed that the RUC capacity payment be paid as-bid to the selected resources. The CAISO also proposed to net the RUC availability payment against each MW of RUC capacity that is scheduled or dispatched for energy or ancillary service in a subsequent market. Similarly, the RUC capacity payment would be rescinded if the resource engages in uninstructed deviation or does not respond to the CAISO's dispatch instruction.[73]

Commission's October 2003 Order

129. In the October 2003 Order, Commission found, among other things, that the RUC process is similar to the procurement of capacity in the ancillary services market and therefore, should be required to replace the proposed $100/MWh availability bid cap to reflect $250/MWh and allow the RUC resource bids to set a market clearing price. In addition, the Commission rejected the CAISO's proposal to rescind the RUC availability

[72] The RUC process operates after the CAISO has established a final day-ahead or hour-ahead schedule. The CAISO believes that this process is appropriate because the outcome of the Integrated Forward Market is predicated on schedules and bids that may not coincide with the CAISO's load forecast. In the event that these markets close below the CAISO's load forecast, the RUC process will commit additional resources to ensure that on-line capacity is available in real time.

[73] *See California Independent System Operator Corporation,* 105 FERC ¶ 61,140 at P 103 (2003).

payment when a unit is dispatched. The Commission stated that "the RUC capacity payment is a payment for the call option on any supplier's capacity and therefore, should be paid regardless of its dispatch . . . If this capacity payment were rescinded, suppliers would be offering day-ahead and hour-ahead RUC capacity at no cost."[74] As a result, the Commission directed the CAISO to modify its proposal to allow for the availability payment regardless of whether the power is taken.[75]

CAISO's Revised Proposal

130. In its revised proposal, the CAISO states that it did not propose to mitigate the RUC because the original proposal required the CAISO to pay RUC resources as-bid and rescind the availability payment. Because the Commission has found this provision to be unacceptable in previous orders and directed various modifications to the RUC process, the CAISO has developed a market power mitigation provision for RUC availability bids. The CAISO contends that it is both appropriate and necessary that RUC availability bids are subject to local market power mitigation similar to energy bids because RUC resources will be procured on a nodal basis and therefore may lead to a greater potential for suppliers of RUC capacity to exercise local market power.

131. Specifically, the CAISO proposes to mitigate RUC availability bids concurrently with the local market power mitigation procedures for energy bids. The CAISO states that if a resource has its energy bid mitigated for local market power in the Pre-IFM process, its RUC availability bid will also be mitigated to a reference level. Reference levels for RUC availability bids will be calculated based on competitive availability bid reference levels, which will be calculated on a unit specific basis as the lower of the mean or median of a resource's accepted "non-mitigated" availability bids for the preceding 90 days. The CAISO states that an initial value of RUC reference prices will be necessary because there will be no historical bids available on the first day that MRTU is implemented. Therefore, the CAISO proposes to set the value at $1/MW.

[74] *Id.* at P 123 and 124.

[75] The Commission addressed further issues related to the RUC process in the June 2004 Order. Specifically, the Commission rejected the CAISO's proposal to lower the availability payment to $150/MWh and set a total payment cap of $250 for RUC availability and energy. In addition to other RUC-related issues, the Commission found the CAISO's proposal to permit availability bids to set the locational market clearing price adequately responded to the Commission's directive in the October 2003 Order. *See* 107 FERC ¶ 61,274 at P 39–80 (2004).

132. The CAISO contends that once a unit has an accepted RUC availability bid that was not subject to local market power mitigation, such bid will be used to determine a bid-based reference price for the next day's market. Thereafter, reference prices will be based on all accepted unmitigated availability bids for the first 90-days of MRTU operation at which point the reference price calculation will convert to a 90-day rolling average. The CAISO notes that in the event that there are no accepted "non-mitigated" RUC availability bids in the previous 90-days, the last available bid-based reference value will serve as the default value until either: (1) an Independent Entity and the affected unit owner reach agreement on an alternative consultative value; or (2) the CAISO awards RUC capacity to non- mitigated RUC bids, which will mean that data are once again available to calculate a new bid-based reference level.

133. The CAISO contends that its proposal to implement this mitigation measure for RUC availability bids is just and reasonable because the CAISO believes that there will be instances where the CAISO will need to procure RUC capacity to satisfy locational needs that are not accounted for by RMR or State Resource Adequacy contracts. The CAISO proclaims that this proposal accomplishes that goal, while still providing supply resources with adequate compensation in those instances in which their availability bids are mitigated for local market power reasons.

Comments

134. SoCal Edison has concerns about the effectiveness of local market power mitigation for RUC availability bids and energy bids, stating that the CAISO proposes to only mitigate the RUC availability bids of generators that were identified in the Pre-IFM mitigation runs as having market power, and makes no mention of mitigating the related RUC energy bids. SoCal Edison argues that the mitigation of RUC energy bids from units identified with local market power is further complicated by the Commission's mandate that RUC units be allowed to rebid their energy after being selected in the RUC process. SoCal Edison further states that the CAISO may introduce constraints during the RUC procurement process that were not included in the Pre-IFM mitigation runs (*e.g.*, voltage support or nomogram constraints) which may imbue units with market power that were not identified as having market power in the Pre-IFM runs. SoCal Edison maintains that all of this may result in a large pool of RUC bidders who have market power, but have no mitigation on either their availability bids or their energy bids.

135. The CPUC maintains that RUC availability bids should be subject to mitigation, as currently proposed by the CAISO. The CPUC further states that, after one year of experience with the RUC availability bid, the CAISO should be required to publish a report outlining the magnitude of non-resource adequacy RUC dispatches and the cost of the availability payments to those units.

Commission Determination

136. We reject the CAISO's proposal to apply local market power mitigation to RUC availability bids. RUC capacity is meant to be a backstop mechanism that is implemented when the day-ahead load bids do not procure sufficient resources to meet the CAISO's identified reliability needs. It is the Commission's understanding that RUC capacity should not need to be procured on a regular basis and, in fact, would rarely be necessary from non-resource adequacy resources as long as sufficient capacity is required through the resource adequacy mechanism. Rather than introducing such a complicated and intrusive process, the CAISO's concerns regarding gaming of RUC capacity may be more simply and effectively addressed through the CPUC's resource adequacy process. Capacity obligations by sellers are to be handled through the CPUC resource adequacy requirements which could easily incorporate basic RUC bidding restrictions on "capacity suppliers" if the CPUC feels that such bidding commitments are necessary. For instance, suppliers of resource adequacy capacity could simply be required to bid zero for RUC capacity in the CAISO market as a condition of its resource adequacy agreement. Additionally, the LSE that has procured the capacity could be eligible to receive any revenues that result from the sale of RUC capacity should the price ever exceed zero. This simple mechanism would ensure that RUC capacity costs are zero when the CPUC resource adequacy requirements have provided the CAISO with sufficient capacity in the day-ahead time frame. It would also provide an appropriate payment mechanism for non-resource adequacy suppliers to commit their resources to the CAISO if the CAISO determines that inadequate resources have been procured by load in the day-ahead market and that additional capacity may be needed in real time.

137. With respect to the CPUC's assertion that the CAISO should be required to publish a report outlining the magnitude of non-resource adequacy RUC dispatches and the cost of the availability payments to those units, we agree. We believe the information will be valuable from the perspective that the CPUC as well as market participants can monitor how effectively the CPUC resource adequacy requirement has performed and whether the CAISO has become less dependent on the RUC process. As a result, we will direct the CAISO to provide an annual update detailing the role of non-resource adequacy RUC dispatches and the associated cost.

Frequently Mitigated Units

138. In its January 18 Guidance Letter, the Commission staff raised the concern that stringent local market power mitigation measures may result in situations in which certain units are mitigated so frequently that they do not receive adequate compensation. The CAISO is now proposing three measures to address this concern: (1) an explicit threshold (mitigated in 80 percent of run hours over a rolling 12-month period) for

defining Frequently Mitigated Units (FMUs);[76] (2) a bid adder for day-one LMP implementation set at a level similar to what was recently approved in PJM[77] for Frequently Mitigated Units that are not under an RMR or a Resource Adequacy contract; and (3) a CAISO-administered local capacity contract for Frequently Mitigated Units that are not under an RMR or Resource Adequacy contract that could either replace or serve as an option to the bid adder. On a longer-term basis (*e.g.*, after the first year of MRTU operation), the CAISO states that it would consider the development of a monthly local capacity market as is being proposed by ISO-NE. The CAISO believes that the development of a formal CAISO administered capacity market is more appropriately addressed on a longer-term basis in coordination with ongoing activities at the CPUC.

139. The CAISO notes that it is not proposing a local capacity contracting option (item 3 above) as a substitute for LSE local capacity obligations stemming from the CPUC resource adequacy requirements. Rather, the CAISO administered local capacity contract will serve as a backstop to the CPUC process in the event there are Frequently Mitigated Units that do not have a RA Contract. The CAISO has initiated stakeholder activities to develop a methodology for determining bid adders for FMUs and to develop the specific design details of the proposed CAISO administered local capacity contract. The CAISO anticipates that it could finalize the bid adder methodology in November 2005 so that a specific bid adder level could be included in the MRTU Tariff filing and will plan to finalize the details of a local capacity contract design by mid-2006 and file it with the Commission shortly thereafter as a replacement or option to the bid adder.

Comments

140. The CPUC is opposed to the bid adder and requests the Commission to reject this aspect of the proposal in favor of the CAISO simply going forward with development of a back-stop local capacity contract to be available prior to MRTU implementation. SoCal Edison does not support the concept of a "$40/MWh bid adder" for FMUs as used in PJM and now proposed by the CAISO as being relatively untested and fundamentally flawed. SoCal Edison agrees that resources necessary to maintain a reliable grid must have mechanisms to ensure cost recovery and a reasonable return. If such mechanisms are not

[76] The CAISO states that it will consider and discuss with stakeholders options for addressing the start-up issue of identifying FMUs with Release 1 of the implementation of MRTU. To the extent special provisions are developed to address this issue, the CAISO will incorporate them in the MRTU Tariff filing.

[77] The Commission approved a bid adder for FMUs in the PJM equal to the higher of $40/MWh or the unit specific going forward costs as reflected in an agreement between PJM and the generation owner. The $40 adder was based on an analysis of older combustion turbines currently in service in PJM. *See PJM Order*.

developed as part of the CPUC Local Reliability process, SoCal Edison supports the concept of the CAISO entering into an RMR or RMR-like contract with the specific resource.[78]

141. State Water Project states that bid adders must be carefully monitored over time, and their costs must not be socialized. State Water Project recommends that RMR should be phased out as MRTU is phased in and must-offer obligations could be phased out over a two-year period, during which time must-offer generation should not be committed unless a stage emergency is declared, to provide a safeguard with minimal market interference during the initial transition period.

142. Calpine states that since the absence of opportunities to enter into long-term capacity contracts should be the touchstone for access to alternative capacity revenue sources, the CAISO has not justified why "backstop" opportunities should be limited to units that are mitigated in 80 percent of run-hours. Further, Calpine states that capacity contracts should be available for all generation that is mitigated because it is providing critically needed reliability service, regardless of the percentage of hours in which it is mitigated. If the Commission does rule in favor of the bid adder for FMUs, the CPUC requests that the Commission follow cost causation principles and also rule that the costs of the bid adder should be allocated to the LSE that failed to meet its local procurement requirements.

Commission Determination

143. In the *PJM Order*, the Commission directed PJM to develop a policy that would provide a reasonable opportunity for recovery of going forward costs to those units that are frequently mitigated to meet local reliability needs. The Commission suggested that such a policy can consist of market design changes that include either higher bid caps for these units, RMR-type contracts or a set of capacity payments that are designed to allow for recovery of going forward costs. However, it is also useful to emphasize that while any of the proposed approaches could be used to allow fixed cost recovery for FMUs, they can differ significantly in terms of their effect on the market. For example, RMR contracts can serve existing units well but may not provide the correct price signals for new investment. Additionally, RMR contracts tend to be short-term and their costs are passed on to customers as uplift charges that are difficult to hedge. Similarly, the local capacity contract may be envisioned as a backstop but its mere existence can take away incentives for LSEs to enter into long-term contracts with the customers. Thus, the CAISO should carefully consider the pros and cons of the proposed alternatives as it proceeds with developing more details.

[78] We note that San Francisco raised similar comments.

144. As presently contemplated, the CPUC's resource adequacy provisions require LSEs to procure 115 to 117 percent of their peak load through long-term resource adequacy contracts. There may be, however, generators that are not awarded a long-term contract under the CPUC's resource adequacy requirements and some of these may be generators that are frequently mitigated. We find that the CAISO's proposal to compensate FMUs through the use of a bid adder is a reasonable approach that provides these units with certainty that they will have an opportunity to recover their fixed costs for serving a local reliability need under MRTU. We share the CPUC's concerns regarding cost allocation and understand that where capacity is procured by the CAISO due to failure of specific LSEs procuring their locational requirements, the CAISO will allocate these costs to LSEs based on their share of under-procured capacity. Where capacity is procured due to contingencies, the CAISO will allocate these costs based on the LSEs serving load in the areas affected by contingencies.

145. We will deny the CPUC's request to reject the bid adder in favor of a backstop local capacity contract. We understand that the CAISO is currently involved in a stakeholder process to explore the development of a back-stop local capacity contract, but the Commission believes that it would be more productive for the CAISO to focus its efforts on long-term proposals that encourage market solutions that rely on forward contracting by LSEs, as opposed to ISO-administered backstops that can hinder such solutions. In the meantime, we direct the CAISO to continue its efforts with market participants to determine the appropriate bid adder level for FMUs.

146. In response to Calpine's concern regarding why bid adders and/or local capacity contracts will only be limited to units that are frequently mitigated at least 80 percent of their run hours, we note that units dispatched at this level may not have the opportunity to recover their fixed costs. If a unit is actively participating in the market more than 20 percent of the time, then that unit has a greater opportunity to recover its fixed costs.

Scarcity Pricing

147. In the January 18 Guidance Letter, the Commission Staff pointed out that the CAISO's proposal to impose system-wide AMP mitigation along with a $250/MWh bid cap could inappropriately suppress prices during system-wide shortages. Staff noted that allowing prices for energy and reserves to rise during shortage periods encourages reductions in demand and additional investment in supply, and reinforces contracting. In light of the fact that each of the existing RTOs/ISOs has a mechanism for prices to rise during such shortages, thus discouraging "free riding" on energy and encouraging LSEs to contract forward for energy needs, the CAISO was asked what measures it planned to take to ensure that its markets provide appropriate price signals during shortages.

148. The CAISO notes that it is no longer proposing system-wide AMP mitigation and, thus, suppliers can bid up to the damage control bid cap without being mitigated except for situations involving local market power. Further, the CAISO states that its MRTU design has a form of reserve shortage scarcity pricing in the real-time market. When the security constrained economic dispatch used in real-time market is in automatic mode, the CAISO states that the software sets a high penalty bid price equal to the $250/MWh bid cap for contingency-only reserves so that they are released only when supplemental energy bids are exhausted. If supplemental energy bids are exhausted, all the contingency only reserves will be released and used in the optimization at an energy bid price of $250.[79] The CAISO asserts that its MRTU design also provides for energy scarcity pricing in the day-ahead market. The CAISO states that if there is a non-economic load reduction in the forward market, the CAISO's proposed design will automatically value load at the bid cap and set prices accordingly.

149. The CAISO notes that, with the exception of preventing price mitigation during periods of true scarcity, the benefits of scarcity pricing can be accomplished through other means. For example, the CAISO states, revenue adequacy and new investment can be addressed through forward contracting and bilateral contracts can be used to address fixed cost recovery. The CAISO further states that it commits to considering developing a more extensive scarcity pricing design at a system level for implementation under a later MRTU software release.

Comments

150. The CPUC is opposed to the two scarcity pricing proposals described in the Conceptual Proposal. The CPUC has some concerns with the CAISO's two proposed scarcity pricing mechanisms. The CPUC states that it is not clear how the CAISO will differentiate between the exercise of market power and legitimate scarcity pricing. Additionally, the CPUC questions the value of scarcity pricing, including the theory that scarcity pricing actually encourages new investment. The CPUC believes that new investment is best encouraged through long term contracting and the types of resource

[79] The CAISO notes that if the economic dispatch software is run in a "Contingency Mode" (*i.e.*, a contingency occurred), then all contingency-only reserve energy bids are released for use with their original economic bids. The use of original economic bid prices for contingency-only reserves will not result in scarcity pricing, which is appropriate because the occurrence of a contingency is not an indicator of scarcity (*i.e.*, a reserve shortage).

adequacy programs currently being implemented by the CPUC and that it is premature to discuss implementation of scarcity pricing until the CPUC's resource adequacy programs can have some impact.

151. Duke states that the possibility of high prices in the spot market when supply is tight creates an incentive to LSEs to enter into the long-term capacity contracts that are contemplated as the mechanism for ensuring resource adequacy and revenue adequacy for generators. Coral believes that the CAISO's proposal to maintain price caps that do not reflect scarcity will undermine the efforts to limit the rise in peak demand that has occurred in California over the past decade. At artificially capped prices, customers, in

particular large and commercial customers, who are in a good position to provide demand response services, never see the real cost of power that induces them to conserve on electricity.

Commission Determination

152. The Commission recognizes that the MRTU design has some forms of reserve shortage scarcity pricing for the real-time and day-ahead market. The Commission finds that the expedited implementation of higher bid cap levels, along with the CAISO's scarcity pricing mechanisms already incorporated into MRTU, will give appropriate price signals during periods of scarcity and provide the necessary incentives for contracting and investment.

153. In regards to the CPUC's concerns, the Commission recognizes that the CPUC's resource adequacy program may also offer incentives to encourage long-term contracting; however, the Commission believes that while the CAISO is accounting for the anticipated resource adequacy procedures in its proposal, the resource adequacy program and scarcity pricing procedures can exist simultaneously. Other ISOs, each also having defined resource adequacy requirements, have chosen to implement pricing schedules that gradually reflect the shortages in operating reserve levels rather than the "all or nothing" approach currently proposed by the CAISO. These "demand curves for operating reserves" more effectively encourage and facilitate voluntary demand response than the use of involuntary load curtailment as a scarcity pricing mechanism. This approach to pricing reliability in the market also reduces the incentive for sellers to withhold during reserve shortages so as to induce load curtailment and, thereby, trigger their curtailment pricing mechanism. The Commission accepts the CAISO's initial scarcity pricing proposal and requires it to continue development towards a more extensive reserve shortage scarcity pricing approach with a later release of MRTU.

Changes to the Day-Ahead Market Process

CAISO's July 22 Filing

154. In its July 22 Filing, the CAISO's proposed a day-ahead market process consisting of a sequence of four main "passes" or optimization steps. Pass 1 and Pass 2 are "Pre-IFM" passes, whereas Pass 3 is the IFM, which creates financially binding day-ahead schedules and the associated LMPs used for the day-ahead settlement, and Pass 4 is the RUC process. According to the CAISO, the purpose of the Pre-IFM passes is to determine the CAISO's needs for Reliability Must Run (RMR) generation and the appropriate mitigation of bids using System AMP and Local AMP to prevent the exercise of market power in the day-ahead IFM. In the first pass, the full network model determines optimal dispatching by enforcing transmission limits only on lines pre-designated as competitive constraints. In the second pass, the thermal limits of all transmission lines are enforced. Once the Pre-IFM process is completed, the mitigated bids and RMR dispatch schedules would be passed on for use in the IFM and RUC.

CAISO's Revised Proposal

155. In its Revised Proposal, the CAISO proposes to modify this market power mitigation process to, among other things, respond to concerns raised in the LECG Report, as described below. Specifically, the CAISO proposes to make the following revisions to the current market power mitigation process:

- The CAISO will not apply the bid conduct and market impact test for System Market Power (System AMP) in the Pre-IFM on day-one implementation of LMP.[80]
- The CAISO will not use Local AMP and therefore will not apply the bid conduct and market impact test for local market power in the Pre-IFM.
- Units mitigated for local market power (*i.e.*, resources that are dispatched up in Pass 2 of the Pre-IFM Process) will have the entire range of their energy bid curve above the level accepted in Pass 1 mitigated.[81]

[80] The CAISO may seek to propose System AMP at a later date upon implementation of a higher bid cap and an effective reserve shortage scarcity pricing mechanism and pivotal supplier test.

[81] Originally, the CAISO had proposed to mitigate only the incremental section of the bid curve dispatched in Pass 2. However, the bid curve will not be mitigated below the highest accepted bid of that resource in Pass 1. This modification was made in

(continued…)

- Resources that have their energy bids mitigated for local market power will have their entire RUC availability bid mitigated to a pre-determined reference price. This modification was made because (1) the RUC design was modified to provide that RUC availability payments are no longer rescinded if the RUC capacity is dispatched for energy, and (2) unlike Ancillary Services, RUC will be procured nodally, thereby making RUC capacity more susceptible to local market power problems.

156. Previously, the CAISO had proposed to limit the pool of resources considered in the IFM and the RUC to those units committed in Pass 2 of the Pre-IFM to meet forecast load. To preserve the effectiveness of local market power mitigation measures applied in the Pre-IFM, the CAISO retains the proposal to limit units considered in the IFM to those units committed in the Pre-IFM. However, the CAISO is making the following change regarding the pool of units considered in RUC. The CAISO will now permit all resources that bid into the day-ahead IFM to be considered in RUC. The CAISO believes that by allowing all units to bid into the day-ahead IFM to be considered in RUC can result in a lower-cost unit commitment resulting from RUC and will not undermine the proposed local market power mitigation measures for energy and RUC availability bids.

157. As mentioned above, the CAISO indicated that the LECG Report identified three concerns relating to how the Pre-IFM passes work under the market design. First, the LECG Report contends that it is possible that the local transmission constraints binding in the Pre-IFM (Pass 2) would be different from those binding in the IFM (Pass 3). Moreover, even if the same constraints were binding, the relative constraint shadow prices could be very different, implying different locational prices. As a result, generation possessing local market power may not be dispatched in the Pre-IFM, could therefore be unmitigated, and potentially able to exercise market power in the IFM.

158. Second, the report contends that treating the Pre-IFM Pass 1 unit commitment, which is based on a consideration only of the competitive constraints, as fixed in Pre-IFM Pass 2, could cause the Pass 2 unit commitment to be quite different from the overall least cost unit commitment. If the market power mitigation in Pass 2 is not based on a least cost unit commitment, there is further reason for concern that units possessing locational market power would be unmitigated and potentially able to exercise market power in the IFM (Pass 3).

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response to concerns expressed by LECG that certain differences between the running of the Pre-IFM and the actual IFM may result in inadequate bid mitigation for local market power.

159. Finally, the report contends that the structure of the Pre-IFM local market power mitigation pass (Pass 2) will not necessarily preclude the exercise of market power by non-RMR units that are the least-cost method for managing congestion on local transmission constraints but have high-cost alternatives. These high-cost alternatives could either be higher-cost units at a similar location or comparable units at a less favorable location. The significant feature of the Pass 2 mitigation in this regard is that, under this PJM-style mitigation, non-RMR units are subject to offer price mitigation in Pass 3 only to the extent that they are actually dispatched in Pass 2. The Report states that if there is a high-cost alternative to dispatching a particular non-RMR unit, a unit with inflated offer prices would not be dispatched, or would not be dispatched at the competitive level in Pass 2 if the unit submitted offer prices that exceeded those of its high-cost alternative. In this circumstance the unit with the inflated offer prices would either not be mitigated at all or would only be mitigated over a portion of its bid curve in Pass 3 under the current mitigation structure. In this situation, the unmitigated portion of the bid curve would effectively economically withhold capacity and allow the market price to be set by the offer price of the high-cost alternative.

160. While the CAISO believes that it is important to address all three of these concerns, the CAISO has determined that only one of those concerns can feasibly be added to the scope of Release 1 of MRTU without risking the February 2007 implementation date. Specifically, the CAISO's proposes to modify its optimization process that currently restricts all resources offered in the day-market to those resources committed in the Pre-IFM (*i.e.*, the second concern described above). To allay concerns about the partial treatment of the other issues, the CAISO states that it has given careful consideration and examination of possible scenarios that could give rise to adverse outcomes in Release 1 of MRTU and subsequently determined that there would be minimal risk.

Comments

161. SoCal Edison believes that the Pre-IFM mitigation process must address all generators with local market power. SoCal Edison recommends that the CAISO identify and include all constraints that may result in a call for RUC capacity in the Pre-IFM mitigation process. In addition, RUC mitigation must include provisions for addressing the energy bids of RUC generators identified as having market power. That is, if a unit identified as having market power in the Pre-IFM run is then selected for RUC, this unit must not be allowed to "rebid" its energy price at a level above its mitigated energy price.

Commission Determination

162. We support the CAISO's proposal to modify its optimization process. We believe the CAISO's proposal to no longer limit the pool of units considered in the RUC process to the second pass in the Pre-IFM will allow the CAISO to procure reliability needs from a wider range of resources without undermining the proposed local market power mitigation for energy. If the CAISO finds that the concerns raised by LECG will adversely impact the outcome or performance of the market design, the CAISO should file the necessary changes to resolve issues with the Commission.

163. We also support SoCal Edison's assertion that a unit having market power in the Pre-IFM should not be allowed to "re-bid" its energy price at a level above its mitigated price. In the June 2004 Order, the Commission determined that units should be allowed to re-bid or adjust their day-ahead IFM market bids if they were not taken in *that market*, but subsequently selected for day-ahead RUC.[82] Thus, the CAISO upon making its tariff filing should expressly note the limitations of re-bidding day RUC energy prices.

Must-Offer Obligation

164. State Water Project asserts that the MRTU Conceptual Filing should include a schedule to phase-out RMR and must-offer[83] units because they should not be needed if successful Resource Adequacy and other reforms are in place. Specifically, State Water Project suggests phasing out must-offer generation requirements over a two-year period, during which time must-offer generation should not be committed unless a State Emergency is declared. State Water Project asserts that this would provide a safeguard with minimal market interference during the transition period as MRTU reforms take effect and influence the market. IEP/WPTF asks the Commission to replace the must-offer obligation with a "robust resource adequacy mechanism" that satisfies system and local installed capacity (ICAP) requirements in a forward-looking and transparent manner. Coral Power and Dynegy/Williams endorse IEP/WPTF's request. SMUD criticizes the CAISO for dodging specification of the Resource Adequacy-based Must Offer obligation, which SMUD asserts must be at least substantially resolved, along with a number of other issues, prior to the November tariff filing.

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[82] *See California Independent System Operator Corporation*, 107 FERC 61,274 at P 77-80 (2004).

[83] The must-offer obligation requires generators not otherwise under contract to offer to the CAISO all of their capacity in real-time during all hours if it is available and not already scheduled to run through bilateral agreements.

Commission Determination

165. The CAISO has not addressed the issue of the appropriate treatment of the must-offer obligation in its MRTU Proposal. If the CAISO were to raise this issue in its November 2005 tariff filing, we would address it at that time.

E. Alleged Deficiency of the CAISO's Conceptual Filing

166. SMUD raises no substantive issues pertaining to the market elements described in the CAISO's conceptual proposal. Instead, SMUD contends that the CAISO's filing is deficient because it contains no tariff sheets and fails to address a number of unresolved issues, such as CRRs, development of long-term transmission service, resource adequacy, *etc*. SMUD also argues that the CAISO's request for approval of the instant filing by July 31, 2005 is based on an unsupported claim that the Market Redesign will be implemented by February 2007 which, in SMUD's opinion, is not feasible. SMUD also contends that by requesting Commission action by July 31, 2005, the CAISO is forcing premature and needlessly expedited reviews of essential market designs and the postponement of the development of a financially-binding hour-ahead market until after the February 2007 deadline. SMUD also states that the Staff Report on Information Technology Guidelines for Power System Operation strongly cautions against setting arbitrary implementation dates tied to still-untested software systems.

167. SMUD also raises a concern that the Category B issues included in Release I have not been resolved among stakeholders, while the CAISO plans to have them resolved and implemented by the end of 2005. SMUD also argues that it would not be possible to resolve these issues because the CAISO cannot accommodate any resolution of the remaining issues without any significant impact on the software design. SMUD concludes that the CAISO is essentially seeking the Commission's approval to proceed with the development of costly software without knowing what the final product will look like. PG&E also argues that the instant proposal is only a portion of the overall market design and its economic and operational effects cannot be evaluated without seeing the entire design.

Commission Determination

168. We disagree with SMUD's contention that the CAISO's filing is deficient. The instant filing is conceptual, and, by its nature, lacks details and supporting tariff language that one would expect to find in a more detailed tariff filing under section 205. The matters discussed in the filing and this order are subject to further proceedings and orders. The market design elements proposed in the instant filing will be submitted for Commission consideration as part of a comprehensive tariff, which will include the Release I market features. At that time, parties will have the opportunity to comment on the details and tariff language pertaining to the instant proposal.

169. In the instant filing, the CAISO seeks Commission guidance and approval in principle of only certain elements of its Market Redesign. The CAISO plans to provide details on the Category B issues in its Market Redesign tariff filing in November 2005. In the meantime, it plans to conduct a several-month stakeholder process to resolve the Category B issues.[84] SMUD's contentions that this stakeholder process might not yield desirable results in time for the November filing is not a compelling reason for rejecting the instant conceptual filing.

170. While we believe that an expeditious action on the instant filing is necessary to allow the CAISO to proceed with the development of the detailed tariff provisions and the software required to implement the changes, our rulings in this order are based on substantive factors. We also note that the February 2007 deadline is not arbitrary contrary to SMUD's contention. The February 2007 deadline was first communicated to the Commission in a July 6, 2004 status report by the CAISO. As the CAISO explained, the Board of Governors made the decision to extend the previously established deadline for the integrated implementation of the MRTU until February 2007 due to the complexity of the task and the need for significant coordination in assuring that all components would operate seamlessly.[85]

F. Convergence Bidding

171. IEP/WPTF, Sempra, and Dynegy/Willaims state that the CAISO continues to defer action on convergence bidding and makes no strong commitment to include it in the MRTU despite the Commission's ruling in favor of convergence bidding. IEP/WPTF and Duke also state that CAISO continues to offer no basis for not implementing convergence bidding. In their opinion, the CAISO-alleged contentious nature of the convergence bidding does not constitute a "full explanation" required by the Commission. Duke also argues that CAISO's assertion that the incorporation of convergence bidding into Release 1 would result in certain delay of the implementation schedule does not constitute a sufficient justification for excluding convergence bidding from Release 1 matters.

172. IEP/WPTF further argues that the absence of convergence bidding promotes LSEs' systematic and successful exercise of market power during periods of high demand for electricity during which LSEs can understate load to achieve a lower day-ahead price while making shortfall in the real-time market. In its comments, Sempra quotes the LECG report, which states that convergence bidding will tend to: (1) provide improved

[84] MRTU Conceptual Filing at 4-6.

[85] The CAISO's Monthly Status Report, Docket No. ER02-16546-011, at 5 (July 6, 2004).

price convergence between the day-ahead and real-time markets; and (2) produce a better relationship between bid load and real-time load, reducing the need to commit generation in the RUC.

Commission Determination

173. In our previous orders addressing the MRTU proposal, we have consistently ruled that convergence bidding will be beneficial to the California market and directed the CAISO to include it in its market design.[86] We, however, allowed the CAISO flexibility in the timing of filing tariff language addressing convergence bidding. In the January 2005 Order, we clarified our directive in regard to convergence bidding. Specifically, we stated that the CAISO was directed to either: (1) submit tariff sheets to implement convergence bidding simultaneously with the implementation of the day-ahead market, or (2) if it does not believe the simultaneous implementation to be feasible, explain why and inform the Commission of a date when it would be feasible to implement it.[87]

174. In its filing, the CAISO states that convergence bidding is not easily accommodated in the MRTU design and that it commits to explore sometime in 2006 the viability of implementing convergence bidding after February 2007. The CAISO now states that it has no plans to implement convergence bidding simultaneously with the day-ahead market; however, it fails to provide any explanation regarding why the simultaneous implementation is not feasible. Accordingly, we find that the CAISO has failed to comply with our directive in the September 2004 Order. We direct the CAISO to file, within 30 days of the date of issuance of this order, a full explanation of the alleged infeasibility to implement convergence bidding simultaneously with the day-ahead market. In that filing, the CAISO must also provide a date when it would be feasible to implement convergence bidding.

175. The introduction of convergence bidding in other LMP-based electricity markets, such as ISO-NE and Midwest Independent System Operator, has proven to be a success. Market monitors in these LMP markets vigorously support the use of convergence bidding. If introduced in the CAISO's market, convergence bidding could help reduce reliance on RUC processes, reduce uplifts from inefficient unit commitments, improve price convergence and reduce market power. In order to implement an effective market platform that takes into consideration successes and lessons from other regional markets, the CAISO should move rapidly toward incorporating convergence bidding into its MRTU platform.

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[86] *See, e.g.*, June 2004 Order at P 158-159; September 2004 Order at P 76; and January 2005 Order at P 33.

[87] *See* January 2005 Order at P 33.

G. Monthly Status Reports

176. In an order issued in November 2002, we directed the CAISO to file monthly reports on its MRTU implementation efforts, indicating the progress made and upcoming steps. [88]

177. CPUC requests the Commission to require the CAISO to provide more information regarding the status of the MRTU implementation in its monthly status reports to the Commission. Specifically, the CPUC believes that more detailed information on the status of each of the market design elements is needed.

Commission Determination

178. We grant CPUC's request and direct the CAISO to make their monthly status reports more informative by including a summary table on the status of each of the market design elements. That summary must contain information on due dates for key implementation items, including the status of software development and whether it is in factory acceptance testing, unit testing, integration, client testing, or completion stage.

H. RUC Self-Provision

179. The State Water Project believes that the HASP proposal addresses concerns regarding Scheduling Coordinators' exposure to RUC or RMR capacity commitment costs. However, the State Water Project argues that RUC self-provisions should not be subject to displacement by RUC or RMR capacity commitments undertaken by the CAISO. They argue that criteria must be established to clarify when (or if) the CAISO may not accept a Scheduling Coordinator's adjusted bid.

180. Sempra believes the CAISO should defer or drop altogether the proposal to allow self-provision of RUC, stating that it is an "unnecessary solution looking for an unidentified problem." Sempra highlights LECG's comments that withholding a generating unit from the day-ahead market in order to self-provide RUC capacity could be problematic if the unit were one of a limited set of alternatives for managing a transmission constraint. LECG notes that this may not be a substantial problem in practice if all units possessing locational market power had reliability must-run contracts and thus could not contract to provide RUC to a third party. LECG recommends, at a minimum, that the CAISO make this condition a requirement. Sempra notes that the CAISO and CPUC are seeking to reduce reliance on reliability must-run contracts and so

[88] *California Independent System Operator Corporation*, 101 FERC ¶ 61,266 at P 8 (2002).

finds the LECG suggestion unpersuasive. Sempra argues that the CAISO should not expend limited software resources to incorporate into the market design a mechanism that is unnecessary and possibly anti-competitive when deserving market design improvements are in danger of being dropped for want of staff and software resources. Moreover, Sempra points out that the CAISO has acknowledged it is no longer certain that stakeholders continue to seek a self-provision of RUC mechanism, especially in light of recent improvements in the HASP. Most importantly, since no other ISO has attempted to provide a self-provision of RUC capability, Sempra argues the CAISO has only a rudimentary understanding of how such a mechanism could be designed and implemented.

Commission Determination

181. The issue of RUC self-provision is not addressed in the instant filing. As the CAISO informs us, RUC self-provision is among the Category B issues which will be addressed in stakeholder activities within the next few months in preparation of the November 2005 MRTU tariff filing.[89] We therefore expect the CAISO to include the RUC self-provision feature in its tariff filing in November 2005. At such time we will entertain parties' comments on the issue of RUC self-provision.

I. Other LECG recommendations

182. Sempra notes that LECG presented its recommendations in three tiers: (1) those MRTU market design issues that are of high importance to address, (2) other features of the MRTU market design that ought to be addressed prior to implementation, and (3) potentially problematic features of the MRTU market design. Sempra is concerned that the CAISO is not addressing all of the first and second tier LECG recommendations. Sempra acknowledges that some identified flaws are greater than others, but cautions that any deferral in addressing these recommendations carries its own risk, and must be the product of careful consideration of the potential threat involved and an informed judgment about the potential for delay, "recognizing that the chronic market coordination problems of the past will produce "hair trigger" criticism if the new market design proves to be demonstrably flawed in any material way."[90] Accordingly, Sempra urges the Commission either to direct the CAISO to prepare and test, in consultation with LECG, the computer code needed to implement each recommendation, or to establish a date certain for implementation of each LECG recommendation, and requiring the CAISO to explain why the market design weakness described by LECG is not likely to become a

[89] *See* the CAISO's MRTU Conceptual Filing at 58.

[90] Sempra's Comments at 11.

significant cause for concern upon initial roll-out of the new MRTU markets. Finally, Sempra urges the Commission to require the CAISO to address all third-tier LECG recommendations as soon as practicable.

Commission Determination

183. We note that our order approves or directs improvement on two of the issues identified by LECG as top priority. We are approving the CAISO's proposal to clear LAP level load bids based on LAP prices, and we are directing the CAISO to further disaggregate its proposed LAP zones.

184. Regarding the second tier of the LECG recommendations, the Commission understands and shares Sempra's desire to have the best possible market design as soon as possible. We also understand the need to correct expeditiously the fatal design flaws identified in January 2000 that continue to plague the CAISO operations. Balancing these two objectives is challenging. The CAISO should re-examine which of these recommendations it could incorporate into its November MRTU tariff filing, and to ensure the software foundations necessary for implementing further improvements in a Release 2 of market design improvements. In response to the third tier recommendations, we note that our order addresses the potentially problematic $250 soft bid cap. In regards to other tier three recommendations, the CAISO should address the LECG recommendations as soon as practicable. We point out that although some tier three recommendations may be less critical, if these modifications are desired by stakeholders and can be implemented in Release 1 of MRTU without jeopardizing the project schedule, we expect the CAISO to do so.

The Commission orders:

(A) Approval in principle is hereby granted for certain elements of the CAISO's May 13 Conceptual MRTU Filing; modification of certain elements of the proposal are directed; and guidance is provided, as discussed in the body of this order.

(B) The CAISO is hereby directed to submit, within 30 days of the date of issuance of this order, a compliance filing, as discussed in the body of this order.

By the Commission. Commissioner Kelly not participating.

(S E A L)

Magalie R. Salas,
Secretary.